TURKISH STANDARDIZATION OF THE SYMPTOM ASSESSMENT-45 QUESTIONNAIRE (SA-45)

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Turkish Standardization of the Symptom Assessment-45 Questionnaire (SA-45)

Semptom Değerlendirme Ölçeği'nin Türkçe Standardizasyonu (SA-45)

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Thesis Abstract

Turkish Standardization of the Symptom Assessment-45 Questionnaire (SA-45)

Hejan Epözdemir

The purpose of this study is to conduct standardization of Symptom Assessment-45 Questionnaire (SA-45) including reliability and validity analyses and a norm study for Turkish adult population.

In the present study two different samples, which included non-clinical and outpatient samples were used. The non-clinical sample included 620 adult individuals 520 of whom were working as professionals in companies and the other 100 were psychology students at Istanbul Bilgi University. The outpatient sample of this study was 2481 individuals who had applied to the Institute for Behavioral Studies (DBE) for psychotherapy.

The psychometric analyses of SA-45 were conducted in three steps. First, the norm study of SA-45 scales was performed for the non-clinical sample by gender. Second, the reliability analyses were conducted for both non-clinical and outpatient sample. And finally, the validity analyses were performed for both non-clinical and outpatient samples.

Overall the results of the reliability and validity analyses and the norm study of the present study are discussed in comparison with the results of the original study. Consequently the results of the current study demonstrated that SA-45 was a valid and reliable instrument for Turkish adult population and that it could be used for several clinical purposes such as helping diagnose, planning treatment, monitoring, and therapy outcome assessment. However, further studies are needed with inpatient samples for completing Turkish standardization of Symptom Assessment-45 Questionnaire (SA-45).

Tez Özeti

Semptom Değerlendirme Ölçeği'nin (SA-45) Türkçe Standardizasyonu

Hejan Epözdemir

Bu çalışmanın amacı, Semptom Değerlendirme Ölçeği'nin (SA-45) Türk yetişkin nüfusu için geçerlik, güvenirlik analizleri ile norm çalışmasını içeren standardizasyon çalışmasını yapmaktır.

Bu çalışmada normal ve ayakta tedavi gören olmak üzere iki farklı örneklem grubu kullanılmıştır. Normal örneklem grubu şirketlerde çalışan 520 profesyonelden ve İstanbul Bilgi Üniversitesi Psikoloji Bölümü'nde okuyan 100 öğrenci olmak üzere toplam 620 kişiden oluşmaktadır. Ayakta tedavi gören diğer grup ise, Davranış Bilimleri Enstitüsü'ne (DBE) psikoterapi için başvuran 2481 kişiden oluşmaktadır.

SA-45'in psikometrik analizleri üç aşamada gerçekleştirilmiştir. İlk olarak normal grup ele alınmış ve cinsiyete göre norm çalışması yapılmıştır. İkinci aşamada hem normal hem de ayakta tedavi gören grup için ayrı ayrı güvenirlik analizleri, üçüncü aşamada ise yine her iki grup için geçerlik analizleri tamamlanmıştır.

Bu çalışmada güvenirlik ve geçerlik analizlerinin ve norm çalışmasının sonuçları, orijinal çalışmanın sonuçları ile karşılaştırılarak tartışılmıştır. Sonuçlar, SA-45'in Türk yetişkin nüfusu için geçerli ve güvenilir bir ölçme aracı olduğunu ve tanı, tedavi planı, izleme ve terapi sonuçlarını değerlendirme gibi klinik faaliyetlerde yardımcı bir araç olarak kullanılabileceğini göstermektedir. Buna karşın, Semptom Değerlendirme Ölçeği'nin (SA-45) Türkçe standardizasyon çalışmasının tamamlanması için, yatarak tedavi gören hastalarla yapılacak çalışmalara ihtiyaç vardır.

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Chapter 1: Introduction

1.1 Purpose of the Study

The purpose of this study is to conduct standardization of Symptom Assessment-45 Questionnaire (SA-45) including reliability, validity analyses and norm study for the adult Turkish population.

1.2 Psychological Assessment

The term "psychological assessment" is very often used almost synonymously with 'psychological testing'. Although psychological assessment includes psychological testing, it covers many more activities than psychological testing (Groth-Marnat, 2003; Matarazzo, 1990). At this point, Maloney and Ward (1976, p.5) has stated: *"Psychological assessment is an extremely complex process of solving problems (answering questions) in which psychological tests are often used as one of the methods of collecting relevant data"*

Psychological assessment involves clinical interviews, natural behavioral observations, review of historical documents and collateral reports, and interpretation of test results (Groth-Marnat, 2003; Matarazzo, 1992). Consequently in the Handbook of Standards for Educational and Psychological Testing, psychological assessment is defined as (AERA, APA, & NCME, 1999, p. 119):

"A psychological assessment is a comprehensive examination undertaken to answer specific questions about a client's psychological functioning during a particular time interval or to predict a client's psychological functioning in the future".

Psychological assessment is very important for the description of normal and abnormal behavior. Specifically, it is functional in understanding and evaluating of personality and problems of individuals in various domains of life.

This means that psychological assessment is very important in diagnosing psychological and psychiatric problems and planning treatment. When a clinician is in doubt about the diagnosis of a client, it can be helpful to examine the client to ascertain the diagnoses by psychological assessment. This may happen rather frequently because there are numerous occasions where clients have many problems which lead to multiple diagnoses or when a disorder is masked by symptoms of a totally different disorder. Particularly if a clinician suspects that a client is prone to suicide or homicide, the clinician will need more information about the client, therefore psychological assessment will be necessary to examine the client's risk behaviors and emotional or mental status. Not only to examine risky behaviors or emotional disturbances, but also for other purposes evaluation of a patient's cognitive and emotional status or person's abilities and skills. Also in a typical interview a clinician gathers information about the client's past but that may never be complete because of time restriction imposed by

a session. So it may be helpful to gather extensive information in a short time about a client by a psychological assessment (Groth-Marnat, 1999 & 2000; Olin & Keatinge, 1998).

On the other hand, the therapist may be comfortable with the diagnosis but may not be clear about the kind of therapy that is required. Clinical assessment generally identifies weaknesses and strengths of the client so that the clinician can make critical decisions about how the therapy will be conducted. Among others, these may involve deciding what kind of therapy is appropriate, crisis intervention, hospitalization, child custody and medication. Consequently, psychological assessment may be used for diagnosing, therapy planning, career adjustments or planning a training program for the client (Groth-Marnat, 1999 & 2000; Olin & Keatinge, 1998).

At this point, as mentioned above briefly, one has to make a distinction between testing and assessment. By using a test in an assessment a clinician obtains partial information that he or she can obtain from a whole assessment. Generally many instruments are used, which may include several tests measuring a range of states, from mental disorders to a variety of skills, and the whole information is put together in the course of an assessment. In an assessment the major concern is to determine what the diagnosis is, to resolve to what extent the client is able to function, in order to plan the therapy and measure outcome of the therapy (Anastasi, 1982; Olin & Keatinge, 1998).

Actually, when the literature is examined, it can be seen that the histories of psychological assessment and testing were overlapping. But today, as mentioned above, the meaning of assessment has been expanded. Consequently, in the following paragraphs, the history of psychological assessment and psychological testing are presented separately.

1.2.1 The History of Psychological Assessment

The earliest form of psychological assessment was the clinical interview. For instance, clinicians such as Freud and Jung used unstructured clinical interviews in order to get information about their patients for diagnosis and understanding the structure of personality. However, some clinicians have stated that these unstructured clinical interviews were not reliable and valid empirically (Groth-Marnat, 2003; Jensen-Doss & Weisz, 2008).

Realizing that there is a strong need for psychometrically sound instruments, several pioneers have worked to develop them. Throughout 1920s to 1960s, authors have produced varieties of psychological assessment tools (Groth-Marnat, 2003; Matarazzo, 1990).

During the 1960s and 1970s many tests were designed to eliminate subjectivity and bias of the interview techniques. Indubitably, the increase in popularity of behavior therapy contributed to development of more quantitative, structured and formalized methods of behavioral and psychological assessment over the years. Advance in the development of more structured tests is probably due to a general dissatisfaction with the

Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1952) and requirement for instruments to measure the therapy process and therapy outcome (Groth-Marnat, 2003; Matarazzo, 1990).

During the 1980s and 1990s, a wide variety of structured interview methods were developed and gained popularity such as Diagnostic Interview Schedule (DIS; Robins, Helzer, Cottler & Goldring, 1989), Structured Clinical Interview for DSM (SCID; Spitzer, Williams & Gibbon, 1987) and Renard Diagnostic Interview (RDI; Helzer, Robins, Croughan & Welner, 1981). These instruments, which were very different from unstructured interviews, had more advantages psychometrically. So, they were preferable to unstructured interviews.

Also in the early 1900s administration of self-report personality instruments progressed, specifically during World War I. They were used for screening the pathology of men who were about to enter the military service. For example, the Personal Data Sheet which was developed by Woodworth was used for this purpose (Anastasi, 1982; DuBois, 1970; Franz, 1919; Groth-Marnat, 2003). Since that time, a lot of psychological instruments were developed which included the clinical personality tests such as Rorschach, Thematic Apperception Test (TAT), Minnesota Multiphasic Personality Inventory (MMPI), aptitude and achievement tests such as Stanford Achievement Tests (SAT), Primary Mental Abilities Tests (PMAT), neuropsychological and intelligence tests such as Wechsler Adult Intelligence Test (WAIS), Luria and Halstead-Reitan Batteries and

industrial tests measuring leadership and management skills and tools for assessing performance by assessment centers, 360 degree and employee satisfaction scales and others (Matarazzo, 1990, 1992)

During recent years, traditional means of assessment have expanded to include a wide variety of techniques such as psychological tests and inventories, naturalistic observations, neuropsychological assessment, and behavioral assessments (Groth-Marnat, 2000 & 2003). Among these, the psychological tests and inventories are the most standardized and reliable measurement instruments.

1.2.2 Brief History of Psychological Testing

"A psychological test is essentially an objective and standardized measure of a sample of behavior" (Anastasi, 1982, p.22). This definition of the psychological tests has 3 important characteristics which emphasize a more reliable measurement than other assessment methods: A psychological test is a sample of behavior which is obtained under standardized conditions and there are established rules for scoring or for obtaining quantitative information from the behavior sample (Murphy & Davidshofer, 1991).

Cronbach (1970) stated four functions and objectives of psychological tests. According to him the first function of psychological tests is the sampling of behaviors. Tests isolate and use samples of behavior, which give us the scores on a test, so that one can make generalizations about an individual. The second function of psychological tests is categorizing individuals. This function of psychological tests is used

frequently by clinicians or researchers in routine clinical practice. Often the clinician needs to diagnose psychiatric problems to be able to decide on the type of therapy or medication. The third function of psychological tests is evaluating and comparing therapy methods. The researcher and the clinician need to know which approach or what kind of therapy is effective for a particular problem area. And lastly according to Cronbach (1970), psychological tests enable the researcher or the clinician to test hypotheses in research (Cronbach, 1970).

The use of the psychological tests dates back to the 1800s. Cattell's (1890) "mental test" is accepted as the first psychological test. Following him, the first formal psychological test was developed by Binet (1904) which measured the intelligence level of children so that they could be placed in classes appropriately by the commission of French Ministry of Public Instruction. Subsequently in 1905 he created the Binet-Simon Intelligence Test which was revised by Terman in 1916 and is known as "Stanford-Binet Intelligence Test" today. After Binet's intelligence test many researchers were interested in psychological tests (as cited in Gould, 1981).

As mentioned above, development of psychological tests, particularly personality and mental tests was speeded up during World War I and then II by the need to recruit army cadets and employ them in proper roles. Since then many personality instruments have been developed to measure psychopathology, mental disorders and many other psychological problems. At present the most widely used and most comprehensive one is

Minnesota Multiphasic Personality Inventory (MMPI) and the latest version (MMPI-2) (Geisinger, 2000; Matarozza, 1990).

Beginning from 1935, the relative popularity of psychological tests increased by being used in different contexts like university clinics, psychiatric units, psychological treatment centers, VA Hospitals, centers for developmentally disabled, private practice, and professional organizations. Later this led many researchers to demand from test authors to develop instruments to evaluate interventions and therapy outcome and this further increased the development and use of psychological tests (Groth-Marmat, 2003). So today, psychological tests are used in various areas of applied psychology such as clinical, counseling, and industrial and school psychology. Among these, in clinical psychology, they are used frequently for purposes such as assessment of intelligence, personality, psychopathology (abnormal behavior, emotional disturbance etc.).

The clinical use of psychological testing generally serves two purposes: diagnosing and planning treatment. Furthermore, psychological tests are also important for development and evaluation of research-based assessment and intervention, such as therapy outcome research or public mental health program evaluation in clinical psychology (Anastasi, 1982; Murphy & Davidshofer, 1991).

1.2.3 Criticisms of the Use of Psychological Tests in Clinical Assessment

Although the use of tests and inventories in routine clinical practice for psychological assessment and other purpose is becoming more and more prevalent all around the world, using tests for diagnostic and clinical decisions has been criticized. One criticism comes from psychoanalytic theory. Psychoanalytic theory asserts that there is no qualitative distinction between pathology and normality. Therefore they do not view pathology as illness categorically different from normality. This is one reason why they have always been reluctant to measure pathology and try to avoid using diagnostic tests and inventories derived by using quantitative methods (Bowers, 2000; Hortwitz, 2002). When one examines the testing literature, one can see that some authors have designed tests with a clear aim of categorizing individuals. On the other hand the current tendency is that the tests are based on norms and continuous scores. This allows the clinician to examine the results on a continuum rather than categorically. Although this is the case, many psychoanalytic theoreticians, holding on to their theoretical positions, still today criticize psychological tests, not taking into account the strong demand from the mental health sector on the mental health provider, namely screening and/or diagnosing clients.

Another rather radical criticism comes from the "social constructionist" view. They assert that diagnostic language which includes "mental illness and disease" is manufactured culturally and it is a meaning giving activity. Therefore illness, pathology, and disease are concepts and

do not reflect an entity in physical reality. They think of psychiatry as a game in power politics. Pathology and normal behavior are determined by the rules working in that specific society. Thinking along these lines, social constructionists are opposed to diagnostic approaches and as a logical extension, to measuring "mental illness" (Bowers, 2000; Hortwitz, 2002). Although the richness of human condition cannot be expressed in a well defined language, the diagnostic approach enables the clinician to describe and define the problem and help planning the treatment. Moreover, psychological tests generally are used for evaluating the individuals in various domains, which include emotional disturbance, cognitive functioning, attitudes, abilities, behaviors and help in diagnosing and planning treatment, but they are not sufficient for a full diagnosis by themselves. So for a full diagnosis, apart from assessing the individual psychologically and using tests, the clinician has to use some other tools such as natural observations, clinical interviews. One may conclude that psychological tests are very helpful tools for the clinician in screening the symptoms and formulating the diagnosis and the treatment plan.

And the last criticism is that testing has not shown improvement and innovation after the first examples. This applies to both personality and ability tests in the market. In any other industry and sector, this has proved to be the opposite (Meier, 2008). Sternberg and Williams (1998) point out that the reason why test publishers do not innovate is that, in other sectors if you do not create new products you cannot survive, whereas, in the testing

industry, the tests that have been produced in the last century are variations on the same theme.

All in all, it can be asserted that psychological tests, on one hand, are not sufficient to diagnose abnormal behavior on their own. However, on the other hand, they provide the clinician the opportunity to make an evaluation based on psychometric data and hence, enlarge his or her clinical perspective. So testing allows the clinician to evaluate the individuals' behavior, personality, intelligence or emotional disturbance and therefore contribute to clinical observation and diagnosis.

Consequently psychological tests can be used in clinical practice and psychological research as contributory. At this point, selecting the most applicable test becomes important for researchers or routine clinical practice. Derogatis and Spencer (1982) mentioned the benefits of self-report instruments. Derogatis and Spencer (as cited in SAI, 2000, p.2) indicated that *"....self-report instruments elicit information that is not available even to trained observers of human behavior; namely, information about internal phenomena that can be only be inferred by mental health professionals from an individual's behavior*". They also pointed out the economic benefits of using self-report instruments which do not require the time and expense of clinicians for administration and sometimes also for scoring. Additionally, they emphasized that the tests are psychometrically objective and powerful.

Despite the fact that self-report instruments have their own benefits they have some limitations. The most significant limitation is the excessive length of many of these instruments. This is the case especially for multidimensional, multi-scale instruments such as MMPI and others. In addition, multidimensional inventories take a long time for the clinician to administer and to calculate the score. According to Maruish (2004, p. 43):

> *"The form of assessment commonly used is moving away from lengthy, multidimensional objective instruments (e.g. MMPI) or time-consuming projective techniques (e.g., Rorschach) that previously represented the standard in practice. The type of assessment authorized now usually involves the use of brief, inexpensive, yet well-validated problem-oriented instruments. This reflects modern behavioral health care's time-limited, problem-oriented approach to treatment. Today, the clinician can no longer afford to spend a great deal of time in assessment when the patient is only allowed a limited number of payer-authorized sessions. Thus, brief instruments will become more commonly employed for problem identification, progress monitoring, and outcomes assessment in the foreseeable future"*

1.3 Symptom Assessment-45 Questionnaire (SA-45)

1.3.1 History of Symptom Assessment-45 Questionnaire (SA-45)

Derogatis and Spencer (1982) stated that there is a need for a simple, short, easily administered and scored, comprehensive general self-report measure of psychological distress. Having this in mind, Derogatis and his team began with the Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974a, 1974b) and later developed a group of short tests. However the HSCL had some practical shortcomings and this led to the development of Symptom Checklist-90 (SCL-90; Derogatis, Lipman, & Covi, 1973) which was later revised and published as the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983, 1994; Derogatis, Rickels, & Rock, 1976). SCL-90-R includes 90 items and measures psychological symptoms and distress regarding 9 psychiatric symptom domains which are somatization, obsessive compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism and 3 global indices; GSI (Global Severity Index), PST (Positive Symptom Total), and PSDI (Positive Symptom Distress Index) (Derogatis, 1983, 1994; Derogatis, Rickels, & Rock, 1976).

Derogatis and his team developed the Hopkins Psychiatric Rating scale (HPRS)-the SCL-90 Analogue Scale and Brief Symptom Inventory (BSI; Derogatis, 1975). Brief Symptom Inventory (BSI) was the short form of SCL-90 which included 53 items and 9 subscales and 3 global indices like SCL-90 (Derogatis, 1975, 1992, 1993). So according to them, there still

was a need for an instrument that cost very little, and that could be used for screening purposes, as a research tool and therapy outcome. Strategic Advantage, Inc. (SAI, 2000) specializing in measuring therapy outcome, decided to shorten the SCL-90 by using its items.

Derogatis's extensive work with the SCL-90 (Derogatis & Cleary, 1977) had clearly shown that for the scales a small number of items were sufficient to keep the construct valid. Also SAI had used the SCL-90 as an outcome measure for many years and knew that it worked for that purpose. The size of the sample that the SCL-90 used was very large and that justified using the data for developing a new instrument.

Therefore the 45 "best" items were selected and they formed the basis of the Symptom Assessment-45 Questionnaire (see Appendix A). Norms for both adolescents and adults were developed by using inpatient and non-patient populations. Validity and reliability studies were done using those data (SAI, 2000).

Symptom Assessment-45 Questionnaire (SA-45) was developed with the idea of a fairly short, psychometrically sound and acceptable instrument to measure psychiatric symptoms and that could be used for measuring therapy outcome. SA-45 was also designed to screen clients for several purposes and to measure therapy progress (Maruish, 2004).

Table 1

Brief Description of SA-45 Subscales and Indices

Subscales and Indices	Description
Subscales	
Anxiety (ANX)	Anxiety scale contains items which try to capture behaviors related to fear, feelings of panic and tension.
Depression (DEP)	Depression Scale measures feelings of loneliness, hopelessness, worthlessness and loss of interest.
Hostility (HOS)	This scale consists of behaviors like outbursts, arguing a lot, shouting, breaking things and intense need to harm people
Interpersonal Sensitivity (INT)	This scale inquires about how one feels about him/herself in relation to others. The items measure feelings of devaluation, feelings that people are not friendly and feeling distress when talking to people or when being watched.
Obsessive-Compulsive (OC)	The items of this scale consist of symptoms related to lack of concentration and difficulties around deciding things such as checking behavior, doing things slowly in order to be correct and feeling that the mind is empty.
Paranoid Ideation (PAR)	Rather than containing clear paranoid symptoms, the items of this scale inquire about behavior that is indicative of paranoid thinking. They include feelings that people cannot be trusted and that they are the cause of "my problems", that they talk about him in a negative way and that the person gets negative feedback frequently for his\her behavior.
Phobic Anxiety (PHO)	This scale consists of items asking about feelings of fear and distress when people are in open spaces and crowds, in traffic, and going out alone. Avoiding situations, stimuli and behavior is also inquired.
Psychoticism (PSY)	This scale concentrates on problems related to dysfunctional thinking patterns. The items include auditory hallucinations, thoughts about people controlling one's mind and thinking that one is guilty and has to be punished.
Somatization (SOM)	The items of this scale consist of rather subtle bodily experiences like numbness, feeling hot or cold, tingling, heaviness in body organs.
Indices	
Global Severity Index (GSI)	GSI gives the total value, as marked from 1 to 5 for each item, for all the items of SA-45.
Positive Symptom Total (PST)	PST gives the total number of symptoms that the respondent checked as present which includes items yielding a response other than "Not at all".

Note: Adapted from Symptom Assessment-45 Questionnaire (SA-45): Technical Manual (p.1), by Strategic Advantages Inc., 2000.

1.3.2 Descriptive Information about SA-45

Symptom Assessment-45 Questionnaire (SA-45) consists of 45 items and measures 9 psychiatric symptom domains which are somatization, obsessive compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. In addition to these subscales, it includes 2 index scores: General Severity Index (GSI), and Positive Symptom Total (PST). The items are rated on a 5-point scale which ranges from "not at all" to "extremely" (SAI, 2000) (see Table I for information about subscales of SA-45).

Although SA-45 does not present a definite and illustrative clinical picture by itself, it has several important advantages for screening symptoms, helping diagnose, planning treatment, and measure clinical progress and outcome. First, it is the short form of SCL-90-R which is one of the most widely used self-report instruments in clinical psychology (Groth-Marnat, 2003) and it is a reliable and valid self-report instrument (Derogatis, 1983). Second, SA-45 is as psychometrically powerful, reliable, and valid as the SCL-90. Third, it is short and easily administered (about 10 minutes) and scored. Fourth, it can be used in any kind of setting where it is needed, such as inpatient, outpatient and primary care facilities. And last, it can easily be used with groups, specifically for screening problematic individuals in large groups in a short time such as public mental health assessment and research. So these are the advantages of SA-45 which make it possible to evaluate the individuals in a relatively short time in routine clinical practice (SAI, 2000).

In the next paragraphs, psychometric studies and characteristic of Symptom Assessment-45 Questionnaire (SA-45) are reported. Firstly the development process of SA-45 which includes selection of items and characteristics of samples separately for both inpatient and non-clinical samples by gender is explained. After that, in the following subsections the reliability and validity analyses and norm study of SA-45 are described.

1.3.3 Development, Reliability and Validity of SA-45

The psychometric studies of SA-45 were executed by using "non-clinical" and "inpatient" samples. In the following subsections, the psychometric studies of SA-45 are presented which include the development process, reliability and validity analyses respectively.

1.3.3.1 Development of SA-45

The process of development of SA-45 was completed in three steps which included the item selection and constitution of the subscales, calculation of norms and comparison of the results of non-clinical sample with a large inpatient sample. At the beginning the items of SA-45 were taken from SCL-90 results where the inpatients of private psychiatric hospitals filled out SCL-90 while being admitted to the hospital. This *"development sample"* was composed of inpatients consisting of 690 adult females, 829 adult males, 466 adolescent females, and 400 adolescent males (Davison, Bershadsky, Bieber, Silversmith, Maruish & Kane, 1997).

Selecting the items of SA-45 was the initial step which finally indicated to the structure of symptom domains. In order to achieve this, item correlations were obtained and as a method "cluster analysis" was applied by utilizing the correlational matrix. Initially, every single item was assumed to be a unique cluster of its own. As a first step, the two items that had the highest correlation were brought together to form a cluster. In every subsequent step, the two most similar clusters were brought together. Similarity in this case meant the average correlation between the items of the two clusters. As a result, nine scales corresponding to the subscales of SCL-90 were formed, where each subscale involved those five items that the corresponding scale of the SCL-90 contained. The subscales of the parent SCL-90 had also been obtained by cluster analysis (Davison, Bershadsky, Bieber, Silversmith, Maruish & Kane, 1997).

After the items were chosen and the sub-scales of SA-45 were established, a sample from the "*normal population"* was used to arrive at the norms. This "non-clinical sample" was comprised of employees of an HMO (Health Maintenance Organization) and their families, high school students which included 748 adult females, 328 adult males, 321 adolescent females and 293 adolescent males for SCL-90. For the norm study, the mean and standard deviations of each SA-45 subscale, percentiles and *T* scores which were derived to mean of 50 and a standard deviation of 10 were calculated for both adults and adolescents by gender and cutoff points established for clinical decisions. In accordance with this, *T* scores of 60 or higher are accepted as a cutoff point indicating a possible clinical

significance which requires further investigation. Furthermore, a *T* score of 65 or 70 is accepted as the criterion, score for non referred individuals who were not identified as having psychological problems (Maruish, 2004; SAI, 2000).

As a last step, the idea was to compare the results of SA-45 from large non-clinical sample with a large "comparison data". One may further speculate that if the clinician is able to compare the applicant with the inpatients, he or she will be in a stronger position to make more sound and valid judgment about a client's responses. For this reason, the results obtained from adult and adolescent inpatients who filled out the SCL-90 were re-scored to be able to obtain scores for each of the SA-45 subscales and indices. This sample was comprised of 5,317 adult females, 5,834 adult males, 2,889 adolescent females, and 2,331 adolescent males who were administered the SCL-90 at the time of admission to inpatient facilities for behavioral health treatment. Consequently, percentiles and *T* scores were calculated for inpatient adults and adolescents according to the gender (Maruish, 2004; SAI, 2000).

1.3.3.2 Reliability Analyses of SA-45

For the reliability analysis of SA-45, internal consistency, test-retest correlations and SEM scores were calculated.

The Cronbach's alpha correlation coefficients of the 9 subscales of SA-45 Questionnaire were between .71 and .91 and they were derived from the non-clinical and inpatient samples separately for both adult and

adolescents (see Table 2 for Cronbach's alpha correlation coefficients of the subscales of SA-45). The results indicated that the internal consistency of SA-45 Questionnaire scales is psychometrically sound and reliable (SAI, 2000).

For the non-clinical adult sample test-retest correlations were between .42 and .88. The results of the non-clinical adolescent sample correlations ranged from .58 to .85. For inpatients, both adult and adolescent samples, test-retest correlations were done in 1, 2, and 3-week intervals. One week interval test-retest correlations for adults were between .42 and .59 and between .46 and .53 for adolescents. Basically these correlations were within the expected range for a short scale given to an inpatient population at three intervals (see Table 2 for test-retest reliability of SA-45) (Maruish, 2004; SAI, 2000).

Another way of indicating the reliability of SA-45 scores is standard error of measurement (SEM). SEM scores calculated for 9 subscale both non-clinical and inpatient samples by raw and *T* scores separately were within the acceptable range (see Table 2 for SEM scores of subscales of SA-45) (SAI, 2000).

Overall the reliability of SA-45 can be regarded as psychometrically acceptable and that the reliability is adequate for the Symptom Assessment-45 (SA-45) Questionnaire to be used for screening, assessment and research

Table 2
The Reliability Analysis of SA-45

	Cronbach's Alpha Coefficients				Test-Retest Reliability				SEM (Standard Error of Measurement)			
	Non-clinical		Inpatient		Non-clinical		Inpatient (1 week)		Raw SEM		*T* SEM	
Scales	Adult[a]	Adolescent[b]	Adult[c]	Adolescent[d]	Adult[e]	Adolescent[f]	Adult[g]	Adolescent[h]	Adult[i]	Adolescent[k]	Adult[m]	Adolescent[n]
ANX	.74	.78	.86	.85	.42	.58	.51	.51	1.50	1.45	4.81	4.04
DEP	.87	.87	.91	.90	.86	.74	.42	.47	.80	1.30	2.37	2,86
HOS	.85	.85	.86	.87	.79	.51	.42	.45	.70	2.35	2.04	4.24
INT	.85	.84	.86	.85	.82	.74	.49	.48	1.05	1.55	2.79	3.14
OC	.81	.81	.88	.86	.80	.64	.53	.53	1.10	1.75	3.22	4.20
PAR	.78	.78	.78	.77	.84	.70	.54	.47	1.00	1.65	3.03	4.02
PHO	.82	.79	.85	.83	.83	.62	.59	.50	.45	1.15	1.53	2.35
PSY	.74	.71	.73	.74	.88	.85	.53	.46	.45	.70	1.43	2.04
SOM	.80	.78	.85	.87	.69	.72	.56	.49	1.15	2.45	3.61	5.38

[a] *N=1,077-1,085,* [b] *N=610-619,* [c] *N=1,471-1,498,* [d] *N=827-858,* [e] *N=57,* [f] *N=64,* [g] *N=2,358-2,827,* [h] *N=1,126-1,394,* [i] *N=57,* [k] *N=64,* [m] *N=57,* [n] *N=64*

Note: Adapted from Symptom Assessment-45 Questionnaire (SA-45): Technical Manuel (p.44, 46, 47, 48, 49), by Strategic Advantages Inc., 2000

1.3.3.3 Validity Analyses of SA-45

Many studies were done in order to establish the validity of SA-45 Questionnaire with different methods such as construct validity, criterion validity and content validity.

For construct validity inter-scale correlations of SA-45 9 subscales were calculated for inpatient adult and adolescent samples. The results were within acceptable ranges which ranged from .38 to .75 for adults and .42 to .79 for adolescents (see table 3 for inter-scale correlations).

Also the study of Davison et al. (1997) can be accepted as another evidence of construct validity of SA-45. In their study, two groups of patients who have severe depression, on all nine SA-45 symptom domain scales were used. The first group consisted of 47 patients diagnosed as having psychotic features; the other group included the 149 patients who did not have these features. The results showed that patients of both groups scored highest on the SA-45 Depression scale; but they were not significantly different from each other on this measure. They had different scores on both Psychoticism and Phobic Anxiety scales ($p < .001$) where patients with psychotic features scored higher than patients who did not have these features. The effect sizes in two instances were 3.40 and 4.80, respectively, suggesting that these two scales may be useful in identifying the presence of psychotic features in depressed patients.

Table 3
Correlations between SA-45 Scales on Inpatient Sample for both Adults and Adolescents

	ANX	DEP	HOS	INT	OC	PAR	PHO	PSY	SOM
ANX									
Adult[a]		.72**	.50**	.70**	.74**	.60**	.67**	.59**	.64**
Adolescent[b]		.74**	.60**	.75**	.79**	.67**	.68**	.67**	.74**
DEP									
Adult			.46**	.75**	.69**	.61**	.50**	.49**	.64**
Adolescent			.58**	.76**	.75**	.65**	.50**	.57**	.61**
HOS									
Adult				.52**	.46**	.58**	.38**	.48**	.40**
Adolescent				.61**	.63**	.65**	.42**	.51**	.55**
INT									
Adult					.71**	.74**	.62**	.59**	.51**
Adolescent					.74**	.79**	.63**	.67**	.64**
OC									
Adult						.60**	.62**	.56**	.62**
Adolescent						.68**	.61**	.65**	.74**
PAR									
Adult							.54**	.62**	.49**
Adolescent							.56**	.64**	.61**
PHO									
Adult								.57**	.53**
Adolescent								.63**	.59**
PSY									
Adult									.46**
Adolescent									.62**

[a] *N=1,360-1,474,* [b] *N= 773-848*

* p<.05, ** p<.01

Note: Adapted from Symptom Assessment-45 Questionnaire (SA-45): Technical Manuel (p.52,53), by Strategic Advantages Inc., 2000

Table 4
Correlations between SA-45 Scales and SCL-90 and BSI

	Adult		Adolescent	
	SCL-90	BSI	SCL-90	BSI
Scales	**(N=1,180-1,498)**		**(N= 646-852)**	
Anxiety	.96	.99	.96	.99
Depression	.96	.99	.95	.99
Hostility	.98	.96	.99	.97
Interpersonal Sensitivity	.96	.94	.97	.94
Obsessive Compulsive	.96	.97	.96	.97
Paranoid Ideation	.98	1.00	.98	1.00
Phobic Anxiety	.97	.96	.97	.96
Psychoticism	.88	.79	.90	.81
Somatization	.94	.90	.95	.92
Positive Symptom Total	.98	.98	.98	.98
Global Severity Index	.99	.99	.99	.99

Note: Adapted from Symptom Assessment-45 Questionnaire (SA-45): Technical Manuel (p.61), by Strategic Advantages Inc., 2000

For the criterion validity of SA-45 correlations were calculated between 11 scales and indices and SCL-90, BSI on large inpatient adult and adolescent samples (see table 4 for correlations between SA-45 and SCL-90 and BSI) (Maruish, 2004; SAI, 2000).

The results of Goldstein and Maruish's (1997) research can be accepted as another evidence of criterion validity of SA-45. They investigated the benefits of integrative behavioral healthcare services in primary care settings. For this purpose, they used SA-45, SF 12 (a brief version of the SF-36 Health Survey which has Mental Component Summary

(MCS) and Physical Component Summary (PCS) subscales; Ware, Kosinski & Keller, 1995) and a brief self-report healthcare resource utilization instrument (as cited in SAI, 2000). The sample of this study consisted of 126 adult outpatients who applied for psychological help at a family practice outpatient clinic. The results indicated that the SA-45 GSI (Global Severity Index), PST (Positive Symptom Total) indices and Somatization scale *T*-scores were correlated with the SF-12 *T*-scores for the Mental Component Summary (MCS) and the Physical Component Summary (PCS) Scales. Correlations of the GSI with the MCS (-.69) and PCS (-.27) were both significant. Similarly correlations between PST and MCS (-.64) and between PST and PCS (-.25) were significant. Also the significant correlations were found between the *T*-scores of the SA-45 Somatization scale and each of MCS and PCS (-.25 and -.50 respectively) (SAI, 2000).

The item-scale correlations of SA-45 were quite strong, generally between .30-.50 ranges for inpatient sample. Reynolds (1991) considers these numbers to be more than acceptable as far as content validity of a scale is concerned. Apart from these results, one may say that the items of each scale reflect a strong association with problem areas indicated by title of each scale which again implies a strong content validity. Consequently the item-scale correlations and symptomatology covered by each of the nine symptom domain scales, as well as their correlations to their SCL-90 counterparts, attest to the SA-45's content validity (see table 4 for correlations between SA-45 and SCL-90 and BSI) (Maruish, 2004; SAI, 2000).

1.4 Related Research

As it was mentioned above SCL-90 and its revised form SCL-90-R was used for creating SA-45. Symptom Checklist-90 Revised (SCL-90-R), as a tool has always been used in academic studies, schools, and clinical fields to identify and assess psychological symptomology. Although SA-45 has become a source recognized by and widely used in the foreign literature, it is not well known in Turkey yet. So in this part, research with related SCL-90-R and SA-45 are presented together.

In the following paragraphs many studies on SCL-90-R and SA-45 are presented. First, research which was done with SCL-90 and next, studies with SA-45 are reported in chronological order.

1.4.1 Related Research with SCL-90-R

SCL-90 has proved to be a very reliable and valid instrument for a variety of purposes. It has been used with good results in different cultures and contexts, with psychiatric symptomology, in assessment, screening and outcome research. After many years SCL-90 became a parent to SA-45. In the following paragraphs some of the studies done with SCL-90 are presented in chronological order.

Symptom Checklist-90-Revised (SCL-90-R) was used in a study with patients in a psychiatry clinic. SCL-90-R was applied to 29 male and 25 female patients aged 18-57 at Ege University Psychiatry Clinic. The relationships among symptom distribution, diagnosis, socio-demographic traits, and SCL-90-R were studied. No statistically significant differences

were found between average GSI scores and sub-scale scores, and diagnosis and socio-demographic traits (Alper, Kabaklıoğlu, Akarsu & Saygılı, 1990).

Validity and reliability studies of Symptom Checklist-90-Revised (SCL-90-R) for the Turkish university students were done by Dağ in 1991. The questionnaire was given to two groups of students including 99 clients and 532 "normal" subjects from Hacettepe University. Analysis was done to obtain mean, standard deviation, and score range for general indicators and sub scales of the questionnaire. Test-retest reliability calculations were carried out, internal reliability was analyzed, validity analyses with MMPI and Beck Depression Inventory were studied; and also the compliance of its theoretical aspect with empirical function structure, and the applied Principle Component Factor Analysis was compared. The study concluded that SCL-90-R is valid and reliable, and can be used on Turkish university students for the purpose of psychiatric assessment. However, it was emphasized that there was not enough evidence to prove that the questionnaire and its subscales could be used for clinical diagnosis beyond a general "distress" (GSI) level (Dağ, 1991).

Wilson et al. (1994) studied traumatic memory/experience by using Post Traumatic Stress Disorder Inventory (PTSD-I), Symptom Checklist-90-Revised (SCL-90-R) GSI (Global Severity Index) Scores, and Impact of Events Scale (IES) questionnaires. In the study with adults the concurrent validity of PTSD-I, IES and SCL-90-R GSI scores were .54 and .66. One week later, IES, SCL-90-RGSI scores and PTSD-I was applied again in the

same study, and concurrent validity was found quite high, reaching the level of .88 and .85

SCL-90-R was used in a study titled "Comparison of the Social Phobia and Panic Disorder by means of demographic and clinical traits". 123 individuals participated including 72 social anxiety and 51 panic disorder patients. The study showed that the total scores of somatization, obsession, compulsion, depression, anxiety, anger/hostility, paranoid ideation, and psychoticism in SCL-90-R are higher in panic disorder group than social anxiety disorder group ($p<0.05$) (Gül & Dilbaz, 2003).

In their study on the last grade high school students in Canada, Yang, Choe, Baity, Lee & Cho (2005) analyzed the frequency of Internet use and the correlation of psychiatric symptoms and personal traits. In their study, they analyzed the excess use of Internet by using SCL-90-R and 16PF profiles and it was found that the symptomology of the individuals who excessively use Internet are considerably high. Moreover, the study showed that excessive Internet users are emotionally stagnant and self sufficient individuals who are easily affected by emotions.

1.4.2 Related Research with SA-45

A line of research utilizing Symptom Assessment-45 Questionnaire (SA-45) focused on a variety of issues, samples and psychiatric symptoms like traumatic experience, children of divorce, psychological abuse, moral conflict, effect of religion on mental health and treatment outcome, along

with many others. In the following paragraphs many studies done with SA-45 are presented in chronological order.

SA-45 was used in a study with 1008 executive officers in Saskatchewan University in 2003. In that study, various factors and health conditions related to the frequency of Post Traumatic Stress Disorder in the population were analyzed. Post Traumatic Stress Questionnaire (PTSQ), Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q), Working Environment Scale (WES), and the Symptom Assessment Questionnaire (SA-45) were used. It was observed that the workers with significantly higher stress due to PTSD get significantly higher scores from five physical symptom items in SA-45 (Stadnyk, 2003).

Rowe (2005) studied the effect of Emotional Freedom Techniques (EFT) workshop on psychological symptoms. 102 participants were tested with SA-45 on five occasions: A month before and at the beginning of the workshop, by the end of the workshop, one month and 6 months after the workshop. There was a statistically significant decrease in all measures of psychological symptoms as measured by SA-45.

Chan, Hess, Whelton and Young (2005) examined if there was any connection between psychological trauma, shame and psychiatric symptoms in women diagnosed with Borderline Personality Disorder (BPD). They used SA-45 for screening psychiatric symptoms. The subjects were 36 women with BPD and 49 University women. They found that the type of trauma like sexual abuse, death of a family member or criminal assault did not predict the level of shame or psychiatric symptoms.

Standardization of SA-45 and its adaptation to Turkish for adolescent population was studied on 550 adolescents, by Avcu (2006) and validity-reliability studies were reported. Internal consistency and test-retest reliability coefficients were calculated for total score and each subscale. Internal consistency coefficients calculated with Cronbach's Alpha method varied between .55 to .78 in subscales and .92 in total. Test-retest correlations of the questionnaire applied to 31 individuals after one week were between .52 and .89 (Avcu, 2006).

For criterion validity, 30 individuals were given SA-45 and ACL (Adjective Checklist), Beck Depression Inventory (BDI) and State-Trait Anxiety Inventory (STAI), and the correlations between them were calculated with Pearson Product-Moment Coefficient. Significant negative relationship between PST index of SA-45, and ACL's order, ideal self, sensitivity, caring, and creativity sub-dimensions were found. Significant positive correlations ranging from .46 to .83 between the entire subscales of SA-45, and PST and GSI index scores were found with Beck Depression Inventory. Negative correlations between Depression subscale of SA-45 and State Anxiety subscale of STAI; significant positive relationship between Anxiety, Obsessive Compulsive and Paranoid Ideation subscales of SA-45 and Trait Anxiety subscale of STAI were reported (Avcu, 2006).

Lopez-Stane (2006) studied long-term effects of childhood abuse. 221 undergraduate psychology students completed the Psychological Maltreatment Experiences Scale (PMES) to obtain a measure of childhood abuse. Participants also completed a scale measuring ongoing relationships

(Attachment Style Questionnaire-ASQ), psychological symptoms (Symptom Assessment (SA-45) and traumatic experiences (Trauma Symptom Inventory-TSI), and the Child Experiences Questionnaire (CEQ). The analysis revealed that psychological maltreatment is associated with high levels of trauma symptoms and problems with secure attachment. Moreover, the individuals who had high levels of symptoms have reported having more rejection, high levels of threats and isolation than the individuals who had low levels of symptoms. In addition, individuals who had high levels of symptoms tended to have more problems in the family, dysfunctional organization of the family and poor relationship with the parent. The study showed that maltreatment of the child can be a serious problem and had strong implications the way in which some children who are abused tend to show more long-term problems.

Galek, Krause, Ellison, Kudler and Flannelly (2007) studied the relationship between religious doubt, mental health, and aging; in a national sample consisted of 1629 adult Americans. Findings indicate that religious doubt has a negative effect on psychological well being. Analysis also reveals that the effect of doubt on psychological symptomology declines as individuals get older. The psychological symptoms were measured by SA-45 and include the sub scales of depression, anxiety, interpersonal sensitivity, paranoia, hostility, and obsessive-compulsive symptoms.

Reay (2007) studied the long-term effects of parental alienation syndrome (PAS). 150 individuals, ages between 18 and 35 who experienced divorce of the parents participated in the study. The level of psychological

distress was measured by the Symptom Assessment Questionnaire (SA-45). PAS was measured by the Parental Alienation Syndrome Questionnaire (PASQ) (Machuca, 2005). Two separate PASQ instruments were given to the participants, measuring how the mother and the father are perceived as inducing alienation. The total score on the Symptom Assessment-45 Questionnaire (SA-45) was used to assess current psychological distress. The study's findings showed that individuals who have experienced divorce in their earlier years had high scores of PAS also had high levels of psychological distress as measured by SA-45.

Church (2009) examined the effect of a new exposure therapy EFT (Emotional Freedom Techniques), on PTSD. The sample is composed of 11 veterans and family members coming from Iraq. Assessment was made by SA-45 (Symptom Assessment 45) and the PCL-M (Posttraumatic Stress Disorder Checklist – Military) a month before the treatment and when the treatment began. The scores of both SA-45 and PCL-M showed statistically meaningful improvements. These improvements were maintained at 90-day follow-up on the general symptom index, positive symptom total and the anxiety, somatization, phobic anxiety, and interpersonal sensitivity subscales of the SA-45, and on PTSD. After the treatment, the clients did not have the diagnosis of PTSD. Despite the size of the sample the study suggests that EFT can be an effective intervention.

1.5 The Current Study

In the light of the information in testing and assessment literature, multidimensional self-report instruments such as MMPI, and SCL-90-R give a lot of information about a client and they assist in diagnosing and planning the treatment. As mentioned above, although the multidimensional instruments are used in routine clinical practice frequently, their application is difficult and limited due to the fact that the administration and scoring is quite time consuming. So it needs to be short and easily administered and scored by multidimensional self-report instruments. In parallel to this the most popular tendency in testing literature is the increase of the number of short multidimensional self-report instruments such as SA-45 in recent years.

The purpose of this study is to conduct standardization of Symptom Assessment-45 Questionnaire (SA-45) for the adult Turkish population. For this purpose, the samples of the study were separated as non-clinical and outpatient samples and the analyses were done in three steps which include reliability and validity analyses for two samples separately and norm study for non-clinical sample by gender.

Chapter 2: Method

2.1 Translation of Symptom Assessment-45 Questionnaire (SA-45)

The translation of Symptom Assessment Questionnaire (SA-45) was done by five professionals in clinical psychology who are bilingual in English and Turkish and working at The Institute for Behavioral Studies (DBE).

2.2 Sample

In this study two different samples for reliability and validity analyses were used and the non-clinical sample was also used for the norm study.

The first sample of this study consisted of non-clinical adults including university students and professionals in companies. The size of the non-clinical sample was 620 individuals (441 women and 179 men) with mean age of 29.77 (SD=9.24; range=19-71). 520 professionals among the non-clinical sample of 620 individuals were working in companies. The other 100 individuals were psychology students who were taking psychology courses at Istanbul Bilgi University.

The second sample of this study was 2481 individuals (1588 women and 893 men) with a mean age of 33.35 (SD= 9.11; range=18-73) who had consulted Institute for Behavioral Studies (DBE) for psychotherapy. Out of

2550 individuals, 69 tests were eliminated because of missing information so that this outpatient sample consisted of 2481 individuals.

2.3 Instruments

2.3.1 Symptom Assessment-45 (SA-45) Questionnaire

The original Symptom Assessment-45 Questionnaire (SA-45) derived from the SCL-90, was translated to Turkish by 5 bilinguals who are professionals in clinical psychology and speak fluently and comprehend both languages; English and Turkish. The Turkish version of SA-45 consists of 45 items as well as the original (see Appendix B).

2.3.2 Beck Depression Inventory

Beck Depression Inventory was developed by Beck in 1961 and it was revised in 1972 (see Appendix C). BDI includes 21 items where items 1 to 13 measure the depressive mood and items 14 to 21 physical symptoms. The number written next to each item (0-3) indicates the sum of the points given (Beck, 1961; Savaşır & Şahin, 1997).

Meta-analysis of 25 studies on the BDI demonstrated that the Cronbach's alpha coefficients ranged between .73 and .95. Another reliability analysis consisted of test-retest correlations for both clinical and non-clinical samples. The test-retest correlations were found between .60 and .83 for non-clinical sample. For clinical samples, the test-retest correlations ranged .48 to .86. (Savaşır & Şahin, 1997).

Meta-analysis of at least 35 studies suggested the concurrent validty of BDI. In these studies correlation between BDI and the other depression scales such as Hamilton Depression Scale, and the Depression subscale of Minnesota Multiphasic Inventory ranged from .65 to .67. In another validity analysis of Beck Depression Inventory (BDI), scores of BDI and DSM-III were compared and the correlations were found between the .33 and .96. in psychiatric patients (Savaşır & Şahin, 1997).

There are 2 Turkish adaptations of Beck Depression Inventory and the first study was done by Tegin in 1980. In the present study, the second adaptation of BDI which was standardized by Hisli (1988, 1989) is used.

For the second Turkish adaptation of BDI, the internal consistency which was calculated by split half method was found .74 and the test-retest correlations were reported to be .65 (Hisli, 1989).

There were many studies demostrating the validity of BDI. One of them includes comparing scores of BDI and MMPI-D (Depression) scale. The study was done on 63 psychiatric patients and the correlation between BDI and Depression scale of MMPI was found to be .63 (Hisli, 1988). Another study indicating criterion validty was done by Şahin & Şahin (1992) on 1399 students. There were found significant correlalations between BDI and MMPI-D scale (r=.47), BDI and STAI (State-Trait Anxiety Inventory) (r=.55) and BDI and ATQ (Automatic Thoughts Questionarre) (r=.74) in this study.

2.3.3 State-Trait Anxiety Inventory

The State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch & Lushene, 1970) is a self-report instrument which includes separate measures of state and trait anxiety (see Appendix D).

This inventory consists of 40 items and two subscales which are state anxiety and trait anxiety. The State Anxiety subscale contains 20 items that ask people to indicate how they feel at particular moment in time. The trait anxiety subscale includes 20 items that ask people to describe how they generally feel (Spielberger, Gorsuch & Lushene, 1970; Öner, 1997)).

The reliability analysis of the original STAI includes internal consistency and test-retest reliability. The Cronbach's alpha coefficients are between .83 and .92 for state anxiety and between .86 and .92 for trait anxiety. The test-retest reliability of trait anxiety is between .73 and .86 and for state anxiety between .16 and .54 (Spielberger, Gorsuch & Lushene, 1970; Öner, 1997).

Le Compte and Öner's (1985) adaptation of STAI in Turkey shows high degrees of internal consistency according to Cronbach's alpha coefficients which are between .94 and .96 for state anxiety scale and .83 and .87 for trait anxiety scale. The test-retest reliability for trait anxiety scale is between .71 and .86, for state anxiety is between .26 and .68. For the STAI's construct validity study, applications with intervals varying from 10 days to 1 year, significant correlations were found between the trait and state anxiety scores ($r=.62$, $p<.01$) (Öner, 1997).

2.4 Procedure

In the present study, two different samples were used: clinical (outpatient) and non-clinical. So the procedure of the study is presented in two parts below.

2.4.1 Procedure of Non-clinical Sample

The non-clinical sample consisted of 620 subjects including university students and professionals in companies.

- 520 subjects in the non-clinical sample who were working as professionals in companies were given SA-45 online.
    - 30 of them were given SA-45 one week later for test-retest reliability analysis.
- 100 subjects among non-clinical sample of 620 subjects were psychology students who are taking PSY 331 and PSY 401 courses at Istanbul Bilgi University.
    - 20 Psychology students who are taking PSY 331 course joined the applications which 4 of them were not considered valid because of missing information. 16 of these students were given SA-45, Beck Depression Scale and STAI at the same time in the first week and one week later only SA-45 was given to the 10 of the students. Thus, these students constituted 10 of the test- retest data of 40 individuals and 16 of them for criterion validity of SA-45 and at the same time

Beck Depression Inventory and State-Trait Anxiety Inventory data of 100 individuals.

- SA-45, Beck Depression and STAI were applied online to 84 Psychology students who were taking PSY 401 course. The individuals were given ID numbers together with their school numbers so that students could take tests online without using their names.

2.4.2 Procedure of Clinical Sample

The clinical sample consisted of 2481 outpatients who applied to Institute for Behavioral Studies (DBE) for psychotherapy. Before the first session, these individuals were given SA-45.

- Out of these 2481 subjects, 293 of them were given Beck Depression Inventory and State-Trait Anxiety Inventory when they arrived for their first session.
    - In addition, on the phone, 40 individuals, who called Institute for Behavioral Studies (DBE) to take an appointment for psychological counseling, were told that an inventory would be sent to them for research purposes, and were given an appointment for one week later. SA-45 was given online at the first application, then one week later when individuals arrived for the first session SA-45 was given again before the session.

Chapter 3: Results

In this part, the psychometric analyses of SA-45 are presented. The results are reported in three steps. Firstly the norm calculation of SA-45 scales was done for non-clinical sample by gender. Secondly, the reliability analyses were examined for both non-clinical and outpatient samples. And lastly, the validity analyses were executed for both non-clinical and outpatient samples.

3.1 Norm Study

The norm study of Turkish standardization of SA-45 for adults included three steps: Firstly, the mean difference of SA-45 scales between non-clinical and outpatient samples were calculated. Secondly, the influences of gender on SA-45 scales were examined. And lastly, the norm calculations were done which derived from SA-45 raw scores by gender on non-clinical sample.

3.1.1 Mean Differences of SA-45 Scales Between Non-clinical and Outpatient Samples

In the present study, data were collected from two different populations, non-clinical individuals and outpatients. Before the norm calculations, the first step is to compare the mean scores of non-clinical and outpatient samples. Table 5 shows the results of independent sample t test of all subscales and indices of SA-45 between non-clinical and outpatient samples.

Table 5
***T*-test Results for SA-45 Subscales and Indices, Non-clinical and Outpatient Samples**

Scales	Mean scores of Non-clinical Sample (N=620)	Mean scores of Outpatient Sample (N=2481)	t	p
Anxiety	8.36	11.13	-14.50	.000**
Depression	9.68	13.12	-17.50	.000**
Obsessive-Compulsive	10.01	11.36	-7.43	.000**
Somatization	8.43	9.65	-6.36	.000**
Phobic Anxiety	6.35	7.01	-4.90	.000**
Hostility	8.02	9.61	-8.51	.000**
Interpersonal Sensitivity	8.46	9.62	-6.69	.000**
Paranoid Ideation	9.61	10.12	-3.06	.002*
Psychoticism	7.28	7.54	-2.05	.040
Positive Symptom Total	19.45	22.67	-7.50	.000**
Global Severity Index	76.24	89.18	-11.22	.000**

Using Bonferroni's correction alpha level were set at 0.004 and 0.001**.*

The results indicated that means of all subscales and indices of SA-45 were significantly different between non-clinical and outpatient samples. With the mean scores of SA-45 subscales and indices were higher for outpatient samples than the non-clinical samples, as presented in Table 5. When Bonferroni's improvement was applied, using an alpha level of .004, only the Psychoticism subscale failed to show a significant difference between the non-clinical and outpatient samples. The results can be interpreted as SA-45 can differentiate between the clinical and non-clinical sample.

3.1.2 Influence of Gender on Raw Sa-45 Scores

Raw SA-45 scores of males and females in the non-clinical sample were compared using independent-sample t-test. These results indicated that four subscales, namely anxiety, somatization, phobic anxiety and psychoticism subscales were significantly different by gender. According to these results, women's scores were higher than men's on anxiety, somatization and phobic anxiety subscales, while men scored higher than women on the psychoticism scale. On the other hand, when Bonferroni's improvement was applied, using an alpha level of .004, only the Anxiety subscale showed a significant difference between men and women (see Table 6 for the means and standard deviations).

Raw SA-45 scores of males and females in the outpatient sample were compared using independent-sample t-test. The results indicated that, except for psychoticism and hostility scales, all subscales and GSI and PST indices showed a significant effect of gender. The analysis indicated that women scored higher than men on all significant subscales and indices. On the other hand, when Bonferroni's improvement was applied, using an alpha level of .004, only the Anxiety, Depression, Somatization subscales and PST and GSI indices showed a significant difference between men and women (see Table 7 for the means and standard deviations).

Although not all subscales and indices revealed significant effects of gender in the normative (i.e., non-clinical) data, it was concluded that Turkish SA-45 norms should be standardized for men and women separately as in the original sample. Also it was found that the effect of gender was considerable in the outpatient sample in this study.

3.1.3 Calculation of Norms

Norm calculations were computed for all SA-45 subscales and indices from the raw score data acquired from the non-clinical sample according to gender, as was done in the original study (SAI, 2000). *T* scores were derived to have a mean of 50 and a standard deviation of 10. Percentiles and *T* scores were calculated for all of SA-45 subscales and indices by gender as presented in Tables 8 and 9.

Table 6
Means and Standard Deviations of SA-45 Standardization Sample Raw Scores by Gender Group for the Non-clinical Sample

	Our Standardization Sample				Original Standardization Sample			
	Females (n=441)		Males (n=179)		Females (n=714-748)		Males (n=312-328)	
Scale	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Anxiety	8.71**	3.59	7.53	3.04	6.90	2.50	6.65	2.25
Depression	9.83	3.84	9.33	3.78	7.45	3.45	6.90	2.90
Hostility	8.05	3.53	7.99	3.32	6.05	2.40	6.35	2.40
Interpersonal Sensitivity	8.47	3.45	8.45	3.03	7.15	3.10	6.80	2.75
Obsessive-Compulsive	10.17	3.44	9.64	3.62	7.40	2.90	7.25	2.75
Paranoid Ideation	9.58	3.31	9.70	3.58	7.15	2.85	7.35	2.95
Phobic Anxiety	6.47	2.52	6.07	1.68	5.55	1.75	5.45	1.60
Psychoticsm	7.15	2.45	7.63	2.51	5.45	1.40	5.65	1.85
Somatization	8.69	3.78	7.79	3.22	7.15	3.00	7.00	2.85
Positive Symptom Total	19.88	9.84	18.4	9.66	10.34	8.79	9.87	8.50
Global Severity Index	77.11	23.27	74.13	21.37	60.30	18.00	59.40	17.55

Using Bonferroni's correction alpha level were set at 0.004 and 0.001**.*

Table 7
Means and Standard Deviations of SA-45 Clinical Sample Raw Scores by Gender Group for the the Outpatient Sample

	Our Outpatient Sample				Original Inpatient Sample			
	Females (n=1588)		Males (n=893)		Females (n=4732-5300)		Males (n=4753-5276)	
Scale	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Anxiety	11.59**	4.47	10.31	4.22	13.45	6.10	11.55	5.45
Depression	13.69**	4.67	12.09	4.42	16.05	6.75	14.45	6.35
Hostility	9.73	4.33	9.39	4.22	9.65	5.25	8.95	4.90
Interpersonal Sensitivity	9.77	4.05	9.34	3.84	12.65	6.00	11.00	5.35
Obsessive-Compulsive	11.50	4.14	11.11	4.13	13.55	6.05	11.85	5.55
Paranoid Ideation	10.23	3.77	9.92	3.82	11.7	5.45	11.05	5.05
Phobic Anxiety	7.13	3.23	6.79	2.86	9.35	5.45	8.35	4.60
Psychoticsm	7.50	2.84	7.61	2.90	8.90	4.55	8.45	4.10
Somatization	9.99**	4.51	9.04	4.19	11.55	5.60	10.50	5.15
Positive Symptom Total	23.31**	9.27	21.51	9.72	24.98	12.32	22.86	12.32
Global Severity Index	91.18**	26.55	85.63	25.61	105.75	41.4	94.95	37.35

Using Bonferroni's correction alpha level were set at 0.004 and 0.001**.*

Table 8

Percentiles and *T* Scores of SA-45 Items for Non-clinical Female Sample (N=441)

	ANX		DEP		HOS		INT		OC		PAR		PHO		PSY		SOM	
Raw Scores	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***
5	39.70	8.39	37.39	3.85	41.37	11.68	39.95	8.28	34.97	2.38	36.17	3.70	44.16	25.51	41.26	16.55	40.23	10.88
6	42.50	24.83	40.00	13.27	44.21	33.56	42.85	25.51	37.88	8.28	39.19	12.47	48.12	60.43	45.33	41.84	42.87	28.80
7	45.20	39.91	42.61	25.40	47.04	52.04	45.75	42.97	40.78	17.80	42.21	24.04	52.08	75.06	49.41	58.62	45.52	42.86
8	48.00	52.72	45.22	37.76	49.87	65.31	48.65	57.03	43.69	29.59	45.24	37.41	56.05	83.22	53.48	72.00	48.17	55.56
9	50.80	63.38	47.83	50.11	52.7	73.58	51.54	66.78	46.59	41.84	48.26	50.91	60.01	88.55	57.56	81.07	50.82	64.97
10	53.60	72.45	50.44	61.22	55.54	79.48	54.44	74.83	49.49	53.97	51.28	62.93	63.97	92.18	61.64	87.98	53.46	71.09
11	56.40	79.48	53.05	68.93	58.37	83.79	57.34	81.63	52.40	65.99	54.31	71.09	67.93	94.56	65.71	92.40	56.11	76.53
12	59.20	84.35	55.66	76.42	61.20	87.19	60.24	86.51	55.30	75.62	57.33	77.10	71.89	96.37	69.79	94.90	58.76	81.63
13	61.98	87.87	58.27	82.88	64.03	90.02	63.14	90.02	58.20	81.41	60.35	83.90	75.85	97.73	73.86	96.83	61.41	85.26
14	64.77	90.36	60.88	86.39	66.87	91.95	66.04	92.18	61.11	85.71	63.38	89.23	79.81	98.41	77.94	98.07	64.06	88.78
15	67.56	93.54	63.49	89.34	69.70	93.54	68.94	93.99	64.01	89.80	66.40	92.63	83.85	98.41	82.01	98.87	66.70	92.63
16	70.35	96.15	66.10	92.06	72.53	95.46	71.84	95.46	66.92	93.54	69.42	95.01	87.82	98.41	86.12	98.87	69.35	95.12
17	73.09	96.15	68.72	94.33	75.36	97.17	74.74	96.49	69.82	96.26	72.45	96.94	91.70	98.75	90.17	99.32	72.00	96.49
18	75.93	97.28	71.33	95.92	78.19	97.17	77.64	97.85	72.72	97.62	75.47	98.64	95.66	99.21	94.24	99.77	74.65	97.62
19	78.71	98.07	73.94	97.05	81.03	98.07	80.53	98.64	75.63	98.30	78.49	99.32	99.72	99.21	98.32	100	77.29	98.30
20	81.50	98.41	76.55	98.07	83.86	98.75	83.43	98.98	78.53	98.87	81.52	99.55	103.70	99.21	102.45	100	79.94	98.64
21	84.30	98.75	79.16	98.64	86.69	99.21	86.33	99.43	81.44	99.09	84.54	99.77	107.54	99.55	106.53	100	82.59	99.09
22	87.08	99.32	81.77	99.09	89.52	99.66	89.21	99.43	84.34	99.43	85.38	99.77	115.47	99.77	110.61	100	85.24	99.55
23	89.87	99.77	84.30	99.09	92.35	99.66	92.12	99.43	87.30	99.43	90.59	100	119.43	100	114.69	100	87.86	99.55
24	92.66	100	86.90	99.09	95.18	99.66	95.03	99.77	90.15	99.77	90.73	100	119.56	100	118.78	100	90.53	99.77
25	95.37	100	89.60	99.77	98.02	100	97.93	100	93.05	100	93.93	100	123.53	100	122.86	100	93.18	100

Table 9
Percentiles and *T* Scores of SA-45 Items for Non-clinical Male Sample (N=179)

	ANX		DEP		HOS		INT		OC		PAR		PHO		PSY		SOM	
Raw Scores	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***	***T***	***%***
5	41.60	15.92	38.54	6.15	41.00	11.73	38.62	8.66	37.2	4.19	36.87	4.47	43.60	27.65	39.51	12.57	41.32	14.80
6	44.98	39.39	41.18	18.44	44.01	34.08	41.92	23.74	39.96	15.36	39.66	13.97	49.57	63.41	43.50	32.12	44.43	36.59
7	48.27	55.03	43.83	33.24	47.02	51.68	45.22	38.27	42.72	28.21	42.45	26.26	55.53	79.61	47.48	47.77	47.53	52.51
8	51.56	68.44	46.48	46.09	50.03	62.85	48.53	52.51	45.48	37.15	45.24	37.99	61.50	89.39	51.47	62.85	50.64	65.64
9	54.85	78.21	49.13	55.31	53.05	72.35	51.83	64.8	48.24	47.77	48.03	47.49	67.47	93.02	55.46	74.58	53.75	73.46
10	58.14	84.64	51.77	63.13	56.06	79.61	55.13	74.3	51.00	60.89	50.83	59.22	73.43	96.37	59.44	84.36	56.86	80.73
11	61.43	88.55	54.42	71.23	59.07	83.24	58.43	81.28	53.76	70.39	53.62	71.23	79.40	98.32	63.43	90.22	59.96	87.15
12	64.72	91.90	57.07	80.17	62.08	87.43	61.73	87.43	56.52	78.77	56.41	79.33	85.36	99.16	67.42	93.58	63.07	90.22
13	68.01	94.69	59.72	87.43	65.09	92.18	65.03	92.46	59.28	86.31	59.20	84.36	91.25	99.16	71.41	96.37	66.18	91.90
14	71.30	96.37	62.36	91.34	68.11	94.41	68.33	94.97	62.05	90.5	62.00	87.43	97.20	99.16	75.39	98.04	69.29	94.13
15	74.59	97.21	65.01	92.18	71.12	95.53	71.63	96.65	64.81	92.74	64.79	89.94	103.15	99.16	79.38	99.44	72.39	96.65
16	77.86	97.21	67.66	93.58	74.13	97.49	74.93	98.32	67.57	94.41	67.58	93.3	109.23	100	83.34	99.44	75.49	96.65
17	81.17	98.04	70.31	95.25	80.87	97.49	78.22	98.32	70.61	94.41	70.37	96.09	115.05	100	87.33	99.44	78.60	96.65
18	84.41	98.04	72.95	96.09	80.92	97.49	81.53	98.88	73.09	95.81	73.16	97.21	121.00	100	91.31	99.44	81.71	96.65
19	87.75	98.88	75.60	96.93	83.16	97.49	84.83	99.44	75.85	97.21	75.96	98.32	126.64	100	95.33	100	84.82	98.32
20	91.04	99.44	78.25	98.32	86.18	99.16	88.12	99.44	78.61	98.32	78.77	98.32	132.92	100	99.28	100	87.93	99.16
21	94.31	99.44	80.87	98.32	89.19	99.16	91.43	100	81.37	98.88	81.54	99.44	138.86	100	103.27	100	91.04	100
22	97.62	100	83.54	99.44	92.20	99.16	94.72	100	84.13	99.44	83.80	99.44	144.82	100	107.25	100	94.13	100
23	100.90	100	86.16	99.44	95.21	99.16	98.02	100	86.89	100	87.12	100	150.77	100	111.25	100	97.24	100
24	104.17	100	88.81	99.44	98.23	100	101.32	100	89.94	100	89.94	100	156.72	100	115.22	100	100.34	100
25	107.46	100	91.49	100	101.23	100	104.62	100	92.71	100	91.58	100	162.67	100	119.20	100	102.83	100

3.2 Reliability

For the reliability analyses of SA-45 internal consistency and test-retest correlations were calculated for both non-clinical and outpatient samples.

3.2.1 Internal Consistency

For internal consistency Cronbach's alpha coefficients were calculated for all subscales of SA-45 for both non-clinical and outpatient samples. For the non-clinical sample Cronbach's alpha coefficients for the SA-45 subscales ranged from .58 to .83, while for the outpatient sample, alpha coefficients for the SA-45 subscales ranged between .63 and .82. Table 10 shows the Cronbach's alpha coefficients for each SA-45 subscale for both sample groups defined in the present study, as well as the non-clinical and inpatient groups used in the original study.

For both non-clinical and outpatient samples, Psychoticism was found to be the subscale with lowest and inadequate internal reliability with .58 and .63 respectively. Similarly, for both sample groups, Anxiety, Depression, Hostility and Somatization subscales were found to have good reliability, equal to or higher than .80. Also the internal reliabilities of Interpersonal Sensitivity, Obsessive-Compulsive, Paranoid Ideation and Phobic Anxiety subscales were found marginally acceptable which means equal to or higher than .70 in both groups.

Table 10
Internal Consistency of SA-45 Subscales

	Sample in Our Study		Sample in Original Study	
	Non-clinical (N=620)	Outpatient (N=2481)	Non-clinical (N=1077-1085)	Inpatient (N=1471-1498)
	A		A	
ANX	.80	.80	.74	.86
DEP	.81	.82	.87	.91
HOS	.83	.82	.85	.86
INT	.78	.78	.85	.86
OC	.71	.74	.81	.88
PAR	.72	.70	.78	.78
PHO	.73	.76	.82	.85
PSY	.58	.63	.74	.73
SOM	.83	.82	.80	.85

3.2.2 Test-Retest Correlations

The test-retest correlations over a one-week interval were calculated for both non-clinical and outpatient samples for 9 subscales and 2 indices of SA-45. For the non-clinical sample (N=40) test-retest correlations ranged from between .67 and .92. For the outpatient sample (N=40) correlations ranged from .44 to .87. Table 11 demonstrates the test-retest correlations for both samples by raw and *T* scores separately, together with the results of the original study.

Table 11
Test-retest Correlations of SA-45 Subscales and Indices for both Non-clinical and Outpatient Samples

	Non-clinical Sample				Clinical Sample				
	Our Study		Original Study		Our Study (Outpatient)		Original Study (Inpatient)		
Subscales and Indices	Raw score	*T* Score	Raw Score	*T* Score	Raw score	*T* Score	1 Wk.[a]	2 Wks.[b]	3 Wks.[c]
	(N=40)		(N=57)		(N=40)		(Raw Scores)		
ANX	.85	.86	.42	.49	.84	.84	.51	.56	.61
DEP	.85	.88	.86	.82	.49	.50	.42	.39	.51
HOS	.90	.90	.79	.77	.44	.46	.42	.38	.52
INT	.90	.89	.82	.79	.87	.87	.49	.49	.61
OC	.87	.87	.80	.81	.77	.76	.53	.53	.63
PAR	.82	.83	.84	.80	.75	.72	.54	.52	.64
PHO	.69	.65	.83	.75	.80	.80	.59	.60	.65
PSY	.67	.73	.88	.79	.71	.69	.53	.49	.63
SOM	.86	.85	.69	.63	.78	.79	.56	.54	.58
PST	.89	.87	.84	.84	.62	.65	.57	.54	.65
GSI	.92	.92	.82	.83	.77	.78	.52	.51	.65

[a] 6 to 8 days, *N*=2,358-2,827; [b] 13 to 15 days, *N*=1,006-1,228; [c] 20 to 22 days, *N*=321-405.

3.3 Validity

Validity of the SA-45 Turkish version was examined using three approaches: construct validity, criterion validity and content validity.

3.3.1 Construct Validity

In the present study construct validity was approached in two ways: first inter-correlations among the SA-45 subscales were examined and second, the differences between the non-clinical and outpatient samples were examined.

Table 12
Correlation between SA-45 Scales for the Non-clinical Sample (N=620)

	ANX	DEP	HOS	INT	OC	PAR	PHO	PSY	SOM
ANX		.76**	.60**	.66**	.66**	.57**	.51**	.46**	.60**
DEP			.61**	.71**	.65**	.57**	.44**	.47**	.55**
HOS				.59**	.55**	.58**	.41**	.48**	.52**
INT					.64**	.70**	.47**	.57**	.46**
OC						.55**	.37**	.46**	.51**
PAR							.47**	.54**	.44**
PHO								.31**	.43**
PSY									.34**

** p<.05, ** p<.01*

Anastasi (1982, p.144) has stated *"the construct validity of a test is the extent to which the test may be said to measure a theoretical construct or trait"*. Following this statement, one way to measure construct validity of multidimensional instruments can be examined the degree of independence of the subscales of the instrument from each other. The levels of the independence of the scales indicate the extent of the correlations of the subscales with each other (SAI, 2000). In the case of a scale like the SA-45, a pattern of inter-correlations showing both similarities and differences among subscales is to be expected.

Table 13
Correlation between SA-45 Scales for the Outpatient Sample (N=2481)

	ANX	DEP	HOS	INT	OC	PAR	PHO	PSY	SOM
ANX		.62**	.47**	.53**	.56**	.47**	.60**	.48**	.59**
DEP			.45**	.59**	.56**	.48**	.33**	.44**	.46**
HOS				.46**	.43**	.55**	.28**	.41**	.42**
INT					.60**	.68**	.45**	.57**	.41**
OC						.51**	.40**	.49**	.50**
PAR							.36**	.54**	.42**
PHO								.41**	.45**
PSY									.35**

** p<.05 ,**p<.01*

The inter-scale correlations were calculated for both non-clinical and outpatient samples. The results indicated that SA-45 subscales were significantly inter-correlated in both non-clinical and outpatient samples, as presented in Tables 12 and 13.

The differences between the scores of SA-45 subscales between non-clinical and outpatient samples can be accepted as another type of evidence construct validity. As presented in Table 5, there were significant differences between non-clinical and outpatient samples regarding all of the subscales and indices of SA-45 except for Psychoticism scale. The mean scores of outpatient sample were higher than the non-clinical sample's mean scores on all the SA-45 subscales. Also while comparing the mean scores of outpatient sample in our study and mean scores of inpatient sample in the original study, it is seen that the mean scores of inpatient sample were higher than mean scores of outpatient sample in all SA-45 scales.

3.3.2 Criterion Validity

To determine the criterion validity, the correlations between subscales of SA-45 and scores of Beck Depression Inventory and State-Trait Anxiety Inventory were calculated for both non-clinical and outpatient samples.

Positive moderate correlations are expected between SA-45 scales and scores of Beck Depression Inventory and State-Trait Anxiety Inventory. Particularly, high correlations are expected between SA-45 Depression subscale and Beck Depression Inventory. Similarly, high correlations are

expected between SA-45 Anxiety Scale and scores of State-Trait Anxiety Inventory. Examination of Tables 14 and 15 shows that the data closely follow this expected pattern.

Table 14

Correlations between SA-45 Scales and Beck Depression Inventory

	Beck Depression Inventory	
Subscales and Indices	**Non-clinical Sample (N=100)**	**Outpatient Sample (N=293)**
Anxiety	.71***	.66***
Depression	.75***	.79***
Hostility	.59***	.55***
Interpersonal Sensitivity	.69***	.53***
Obsessive-Compulsive	.39***	.38***
Paranoid Ideation	.48***	.49***
Phobic Anxiety	.55***	.52***
Psychoticism	.40***	.48***
Somatization	.53***	.26***
Positive Symptom Total	.60***	.61***
Global Severity Index	.71***	.73***

** p<.05, **p<.01, *** p<.001*

The results demonstrated that there were significant correlations between SA-45 subscales and indices and scores of Beck Depression Inventory for both non-clinical and outpatient samples, as presented in the Table 14.

Table 15
Correlations between SA-45 Scales and State-Trait Inventory Scales

	Non-clinical Sample (N=100)			Outpatient Sample (N=293)		
Subscales and Indices	**State Anxiety**	**Trait Anxiety**	**General Anxiety**	**State Anxiety**	**Trait Anxiety**	**General Anxiety**
ANX	.69***	.64***	.78***	.56***	.54***	.67***
DEP	.68***	.66***	.79***	.52***	.57***	.66***
HOS	.40***	.68***	.61***	.38***	.54***	.55***
INT	.55***	.50***	.62***	.37***	.46***	.50***
OC	.29**	.46***	.43***	.31***	.38***	.41***
PAR	.43***	.43***	.50***	.31***	.43***	.44***
PHO	.31***	.59***	.50***	.35***	.65***	.60***
PSY	.25*	.57***	.45***	.23***	.56***	.48***
SOM	.38***	.44***	.47***	.15**	.32***	.28***
PST	.47***	.62***	.62***	.57***	.56***	.68***
GSI	.57***	.69***	.73***	.51***	.68***	.72***

** p<.05, ** p<.01, *** p<.001*

Similarly, the results indicated that sub-scores which included state anxiety and trait anxiety and total scores of State-Trait Anxiety Inventory correlated with subscales and indices of SA-45 significantly, as presented in the Table 15.

Table 16
Item-scale Correlations of SA-45 for Non-clinical Sample (N=620)

Scales	Item No	ANX	DEP	HOS	INT	OC	PAR	PHO	PSY	SOM
	S4	**.74**	.52	.31	.42	.44	.36	.35	.31	.36
	S10	**.75**	.51	.42	.49	.46	.41	.48	.33	.40
ANX	S30	**.82**	.69	.54	.58	.62	.47	.37	.34	.56
	S38	**.68**	.54	.43	.45	.38	.39	.49	.33	.43
	S41	**.74**	.61	.52	.52	.54	.48	.25	.40	.46
	S1	.58	**.77**	.44	.55	.49	.44	.30	.35	.37
	S2	.63	**.81**	.46	.51	.51	.43	.34	.36	.48
DEP	S3	.50	**.72**	.44	.42	.41	.39	.30	.31	.41
	S27	.51	**.72**	.44	.52	.51	.40	.34	.31	.38
	S42	.62	**.72**	.51	.67	.54	.48	.36	.44	.41
	S11	.59	.56	**.81**	.53	.52	.53	.37	.40	.47
	S34	.38	.39	**.76**	.42	.39	.43	.22	.39	.38
HOS	S35	.45	.49	**.81**	.47	.42	.44	.28	.36	.42
	S39	.42	.40	**.68**	.42	.37	.41	.35	.34	.35
	S43	.43	.47	**.79**	.42	.4	.41	.32	.34	.36
	S14	.51	.61	.50	**.71**	.50	.58	.34	.42	.39
	S15	.42	.43	.37	**.71**	.38	.51	.32	.37	.29
INT	S17	.43	.46	.30	**.66**	.44	.35	.28	.39	.21
	S32	.53	.53	.48	**.77**	.48	.55	.42	.43	.42
	S36	.50	.53	.45	**.79**	.49	.52	.35	.46	.31
	S16	.24	.22	.15	.25	**.61**	.27	.11	.21	.08
	S20	.30	.25	.22	.3	**.60**	.32	.22	.30	.23
OC	S21	.55	.52	.42	.53	**.75**	.4	.27	.35	.31
	S25	.55	.52	.52	.48	**.65**	.42	.33	.37	.57
	S28	.60	.65	.52	.55	**.74**	.42	.28	.32	.50
	S6	.34	.42	.37	.42	.33	**.59**	.32	.27	.26
	S9	.38	.37	.38	.46	.38	**.72**	.31	.31	.24
PAR	S19	.42	.39	.42	.49	.43	**.66**	.38	.47	.39
	S40	.37	.40	.40	.45	.34	**.68**	.28	.38	.31
	S44	.42	.40	.42	.56	.39	**.77**	.33	.43	.31
	S7	.27	.22	.26	.26	.22	.29	**.70**	.13	.22
	S12	.27	.26	.24	.27	.17	.33	**.66**	.28	.21
PHO	S22	.32	.29	.21	.22	.21	.24	**.70**	.13	.31
	S24	.52	.39	.40	.46	.40	.42	**.76**	.31	.41
	S37	.32	.32	.24	.37	.22	.32	**.67**	.23	.30
	S5	.14	.17	.20	.25	.15	.31	.12	**.69**	.09
	S8	.34	.31	.25	.28	.27	.26	.27	**.44**	.28
PSY	S13	.28	.29	.30	.35	.29	.36	.16	**.65**	.17
	S33	.45	.46	.47	.59	.44	.45	.29	**.69**	.32
	S45	.24	.27	.28	.29	.30	.26	.16	**.55**	.23
	S18	.31	.30	.28	.23	.31	.26	.25	.12	**.75**
	S23	.49	.42	.35	.37	.36	.36	.41	.29	**.62**
SOM	S26	.45	.43	.47	.37	.37	.34	.38	.34	**.76**
	S29	.55	.50	.45	.43	.49	.37	.28	.30	**.84**
	S31	.51	.47	.47	.38	.42	.37	.34	.26	**.87**

Table 17
Item-scale Correlations of SA-45 for Outpatient Sample (N=2,481)

Scales	Item No	ANX	DEP	HOS	INT	OC	PAR	PHO	PSY	SOM
	S4	**.76**	.51	.25	.37	.35	.28	.43	.33	.35
	S10	**.76**	.31	.30	.36	.36	.33	.54	.38	.42
ANX	S30	**.77**	.59	.45	.46	.53	.42	.37	.34	.52
	S38	**.73**	.30	.27	.33	.34	.29	.59	.32	.47
	S41	**.72**	.55	.46	.43	.49	.44	.32	.41	.46
	S1	.41	**.75**	.31	.44	.35	.36	.21	.30	.30
	S2	.48	**.77**	.30	.35	.39	.32	.20	.29	.33
DEP	S3	.46	**.77**	.32	.36	.41	.32	.25	.30	.36
	S27	.54	**.79**	.39	.47	.51	.39	.33	.37	.44
	S42	.46	**.73**	.38	.61	.47	.45	.27	.42	.33
	S11	.41	.40	**.79**	.37	.36	.45	.21	.32	.35
	S34	.30	.29	**.74**	.32	.29	.39	.22	.33	.30
HOS	S35	.38	.38	**.79**	.37	.37	.41	.24	.35	.35
	S39	.36	.31	**.69**	.38	.33	.45	.22	.30	.28
	S43	.33	.31	**.80**	.31	.30	.38	.18	.27	.31
	S14	.39	.49	.45	**.69**	.42	.56	.25	.38	.35
	S15	.34	.39	.33	**.73**	.40	.56	.32	.45	.29
INT	S17	.35	.48	.24	**.70**	.44	.38	.33	.41	.24
	S32	.42	.39	.33	**.78**	.46	.51	.41	.42	.37
	S36	.42	.41	.32	**.78**	.48	.49	.35	.43	.27
	S16	.23	.26	.19	.36	**.66**	.29	.21	.27	.21
	S20	.31	.24	.26	.36	**.66**	.36	.26	.32	.27
OC	S21	.44	.47	.32	.47	**.75**	.37	.28	.36	.30
	S25	.43	.47	.37	.42	**.66**	.38	.33	.38	.50
	S28	.52	.55	.36	.47	**.75**	.37	.31	.37	.45
	S6	.26	.32	.35	.35	.25	**.60**	.20	.31	.20
	S9	.38	.35	.40	.44	.36	**.72**	.28	.32	.32
PAR	S19	.38	.31	.35	.57	.42	**.68**	.37	.48	.36
	S40	.26	.31	.31	.45	.30	**.62**	.18	.32	.24
	S44	.32	.35	.42	.50	.39	**.75**	.25	.42	.30
	S7	.43	.23	.19	.32	.28	.28	**.73**	.34	.31
	S12	.37	.20	.16	.25	.22	.21	**.66**	.28	.25
PHO	S22	.39	.18	.18	.21	.21	.21	**.73**	.21	.31
	S24	.50	.26	.19	.40	.37	.30	**.75**	.32	.36
	S37	.44	.31	.27	.42	.33	.33	**.76**	.35	.38
	S5	.31	.33	.24	.39	.31	.41	.24	**.73**	.20
	S8	.27	.15	.19	.19	.19	.21	.27	**.43**	.22
PSY	S13	.27	.25	.21	.38	.31	.38	.25	**.67**	.70
	S33	.39	.36	.36	.45	.42	.39	.30	**.71**	.32
	S45	.29	.27	.30	.34	.30	.31	.28	**.61**	.24
	S18	.31	.26	.25	.23	.28	.26	.22	.17	**.72**
	S23	.47	.28	.31	.27	.36	.27	.40	.24	**.65**
SOM	S26	.46	.35	.32	.30	.38	.31	.39	.32	**.77**
	S29	.54	.46	.36	.39	.47	.37	.37	.32	**.83**
	S31	.49	.43	.35	.38	.43	.37	.35	.31	**.84**

3.3.3 Content Validity

As Reynolds (1991) indicated, the content validity is examined with item-scale correlations. In the original study of SA-45, item-scale correlations were calculated for inpatient adult and adolescent samples and the results were accepted as an evidence of content validity of SA-45.

In the present study the item-scale correlations ranged from .44 to .87 between the each item and each subscale in the non-clinical sample, as shown Table 16. The item-scale correlations were between .43 and .84 between the each item and each subscale for the outpatient sample, as presented in Table 17. The strong correlations between items and subscales of SA-45 suggested high content validity of SA-45 in both non-clinical and outpatient samples.

Chapter 4: Discussion

The purpose of this study was to standardize the SA-45 for the Turkish adult population. For this purpose, reliability and validity analyses were carried out for both non-clinical and outpatient samples, and a norm study was performed on the standardization sample.

The non-clinical sample consisted of 100 university students and 520 employees in various companies. Unlike the original study, the clinical sample did not include inpatients, but rather 2481 outpatients who had applied to the Institute for Behavioral Studies (DBE) for psychotherapy.

The standardization of SA-45 was conducted in three steps. First, the norm study of SA-45 scales was performed for the non-clinical sample by gender. Second, the reliability analyses were conducted for both non-clinical and outpatient sample. And finally, the validity analyses were performed for both non-clinical and outpatient samples.

The first step of the norm study was the comparison of non-clinical and outpatient samples. The results demonstrated that all of the subscales and indices of SA-45 mean scores of the outpatient sample were significantly higher than those of the non-clinical sample ($p<.001$ for all subscales, except for Paranoid Ideation – $p=.002$ – and for Psychoticism – $p=.040$ - see Table 5). When Bonferroni's improvement was applied, using an alpha level of .004, only the Psychoticism subscale failed to show a

significant difference between the non-clinical and outpatient samples. Consequently the results supported the use of the SA-45 to screen for symptoms of psychological disorder. In addition, if the current study had included an inpatient instead of an outpatient sample, we might assume that between-group differences could have been higher.

Secondly, the influence of gender on SA-45 subscales and indices was examined for both non-clinical and outpatient samples. The results indicated that Anxiety, Somatization, Phobic Anxiety, and Psychoticism subscales were significantly affected by gender for the non-clinical sample. While women's scores were higher than those of men on Anxiety, Somatization, and Phobic Anxiety subscales; on the Psychoticism subscale, men scored higher than women in the non-clinical sample. On the other hand, when Bonferroni's improvement was applied, using an alpha level of .004, only the Anxiety subscale showed a significant difference between men and women in the non-clinical sample. While women scored significantly higher than men on all subscales and indices except for Psychoticism and Hostility subscales, when Bonferroni's improvement was applied, using an alpha level of .004, only the Anxiety, Depression, Somatization subscales and PST and GSI indices showed a significant difference between men and women in the outpatient sample.

Although not for all subscales, the effect of gender was robust in our samples; and thus, it was concluded that Turkish SA-45 norms should be standardized for men and women separately as in the original sample.

And as the last step of the norm study, following the procedure used by the original study, percentiles and *T* scores were calculated by gender for all SA-45 subscales and indices from the raw score data which was gathered from the non-clinical sample. *T* scores were derived to have a mean of 50 and a standard deviation of 10. It was shown that percentiles and *T* scores of SA-45 subscales and indices were relatively similar for both current and original studies for the non-clinical samples by gender.

In the original study, as a general rule *T* scores of 60 or higher are accepted as a cutoff point indicating a possible clinical significance which requires further investigation. Furthermore, 65 or 70 *T* score is accepted as the criterion, score for non referred individuals who were not identified as having psychological problems (SAI, 2000). These general rules of the original study for making a clinical decision are also acceptable for this study.

The reliability analyses of the current study included internal consistency and test-retest correlations.

For internal consistency, Cronbach's alpha coefficients were calculated for all subscales of SA-45 for both non-clinical and outpatient samples. For the non-clinical sample Cronbach's alpha coefficients of the SA-45 subscales ranged between .71 and .83 except for the Psychoticism scale (α= .58). Similarly in the original study for the non-clinical sample, the Cronbach's alpha coefficients were found between .74 and .87. Both in the present and original studies, the lowest alpha coefficients were found for

the Psychoticism scale (α=.58 and .74, respectively) but in the original study the coefficient was higher than the present study.

For the outpatient sample, alpha coefficients of SA-45 subscales were between .63 and .82 where the highest coefficient belonged to Hostility and Somatization scales and the Psychoticism scale had the lowest coefficient as in the non-clinical sample. In the original study, the clinical sample consisted of inpatients for which alpha coefficients were reported between .73 and .91. Similarly, the lowest coefficient belonged to the Psychoticism scale in the original study.

Results for the internal consistency analyses indicate that the Turkish version of SA-45 has reasonable levels of internal consistency overall. However, relatively lower levels of internal consistency for the Psychoticism scale, especially for the non-clinical sample, might make it advisable clinicians not to heavily rely on SA-45 to screen out psychotic symptoms.

In the present study the test-retest correlations were examined for raw and *T* scores of SA-45 scales separately with one week interval for the non-clinical sample, as in the original study. In the original study, for the inpatients the test-retest correlations were calculated with one-, two-, and three week intervals only over the raw scores. In the present study the test-retest correlations were computed for the outpatient sample for both raw and *T* scores of SA-45 separately with one-week interval. Due to the constraints of the clinical setting where this study was conducted, the test-retest reliability study was done with one week interval. This might be regarded as

a weakness of the standardization study. A further study using longer test-retest intervals might be useful to overcome this weakness.

For the non-clinical sample (N=40) test-retest correlations of SA-45 subscales and indices were found between .67 and .92 in the current study. On the other hand, in the original study, for the non-clinical adult sample (N=57) test-retest correlations were between .42 and .88. While in the present study, the lowest test-retest reliability belonged to Psychoticism scale (r=.67), in the original study the Psychoticism scale had the highest coefficient (r=.88). In the original study the lowest test-retest correlation coefficient belonged to Anxiety scale (r=.42) which was higher in the present study (r=.85). In the present study the GSI had the highest test-retest correlation coefficient (r=.92).

For the outpatient sample (N=40) test-retest correlations of SA-45 subscales and indices were found between .44 and .87 in the present study. While the highest test-retest correlation belonged to Interpersonal Sensitivity subscale, the Hostility subscale had the lowest test-retest correlation. Comparing outpatient test-test correlations of this study with the inpatient test-retest correlations of the original study; it was shown that generally the test-retest correlations of the present study were higher than the test-retest correlations of the original study. The test-retest correlations of inpatients were between .42 and .59 for one-week interval, .38 and .60 for two-week interval, and .51-.65 for three-week interval in the original study. Differing from the non-clinical test-retest correlations, these relatively low correlations of the original study were attributed by the scale authors to the

sample characteristics which included psychiatric inpatients who were emotionally unstable (SAI, 2000).

Examining the overall results of reliability analyses of the present study in comparison with the original study, it can be said that generally the results of the present study were found to be similar to those of the original study, with one caveat for the Psychoticism scale mentioned above. Consequently, the overall results of reliability analyses were within acceptable levels and Turkish version of SA-45 was proved to be a reliable instrument.

In the present study, several analyses were performed to examine different types of validity, including construct, criterion and content validity.

To determine the construct validity, inter-scale correlations were calculated for both non-clinical and outpatient samples in the current study. In the original study the inter-scale correlations had been calculated only for the inpatient sample.

Anastasi (1982, p.144) has stated *"the construct validity of a test is the extent to which the test may be said to measure a theoretical construct or trait"*. Following this statement, one way to measure construct validity of multidimensional instruments can be examined the degree of independence of the subscales of the instrument from each other. The levels of the independence of the scales indicate the extent of the correlations of the subscales with each other (SAI, 2000).

In the case of a scale like the SA-45, a pattern of inter-correlations showing both similarities and differences among subscales is to be expected. So the results indicated that SA-45 subscales were significantly inter-correlated in both non-clinical and outpatient samples.

To the extent that all the subscales tap forms of psychological distress, moderate positive correlations are expected. Lower correlations can be expected between subscales measuring more distinct types of distress (e.g., Psychoticism and Phobic Anxiety for non-clinical sample), while higher correlations can be expected between subscales that measure more closely related types of distress (e.g., Anxiety and Depression for non-clinical sample). Examination of Tables 12 and 13 shows that the data closely follow this expected pattern.

Generally the results of inter-correlations of the present study which were reported for the outpatient sample were similar to the results of the inpatient sample in the original study. While in the present study, the highest correlation was between the Interpersonal Sensitivity and Paranoid Ideation (r=68), in the original study, it was between the Interpersonal Sensitivity and Depression scales (r=.75). On the other hand, the lowest correlation in both samples was between the Hostility and Phobic Anxiety scales (r=.28 and r=.38, respectively).

In addition, to determine the construct validity, the mean scores of all SA-45 scales between non-clinical and outpatient samples were compared in the present study. Except for Psychoticism subscale, in all subscales and indices of SA-45, the mean scores of outpatient sample were significantly higher than those of the non-clinical sample.

Consequently, the results supported the construct validity of the Turkish version of SA-45.

In the original study for the criterion validity, correlation analyses were conducted between SA-45 scales and SCL-90, BSI and SF-12 and the results were found to be significant. In the present study, to demonstrate criterion validity correlations were calculated between the SA-45 scales and scores of Beck Depression Inventory and State-Trait Anxiety Inventory.

The results indicated that there were positive moderate correlations between SA-45 scales and Beck Depression Inventory for both non-clinical and outpatient samples. Furthermore the high correlations were between SA-45 Depression subscale and Beck Depression Inventory for the both non-clinical and outpatient samples as were expected. In addition, generally for the non-clinical sample, the high correlations were found between SA-45 Depression, Anxiety subscales and GSI index and scores of State-Trait Anxiety Inventory. Similarly, for the outpatient sample the high correlations were between SA-45 Anxiety and Depression subscales and PST and GSI indices and scores of State-Trait Anxiety Inventory.

Examining these results, broadly speaking, one may conclude that these results are highly meaningful. Namely SA-45 is an instrument designed for screening the symptoms of general psychological distress through various psychiatric symptomatology which include the scales of Beck Depression Inventory and State-Trait Anxiety Inventory.

In the original study, item-scale correlations were accepted as the evidence of content validity. As in the original study, item-scale correlations were calculated for both non-clinical and outpatient samples in the present study, and they were found to be acceptable and supporting the content validity.

Overall these results demonstrated that SA-45 is a valid and reliable instrument for use with the Turkish adult population and it can be used for several clinical purposes such as screening, helping diagnose, planning treatment, monitoring, and therapy outcome assessment. Furthermore, these results were valid for non-clinical and outpatient samples. However, further studies are needed with inpatient samples to complete the Turkish standardization of SA-45.

Chapter 5: References

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CHAPTER 6: Appendices

Appendix A: Symptom Assessment-45 Questionnaire (SA-45)

Below is a list of problems and complaints that people sometimes have. Please read each one carefully. After you have done so, circle the number on the right that best describes *how much that problem has bothered or distressed you during the past 7 days, including today.* Circle only one number for each problem, and do not skip any items.

		Not at all	A little big	Moderately	Quite a bit	Extremely
1	Feeling lonely	①	②	③	④	⑤
2	Feeling blue	①	②	③	④	⑤
3	Feeling no interest in things	①	②	③	④	⑤
4	Feeling fearful	①	②	③	④	⑤
5	The idea that someone else can control your thoughts	①	②	③	④	⑤
6	Feeling others are to blame for most of your troubles	①	②	③	④	⑤
7	Feeling afraid in open spaces or on the streets	①	②	③	④	⑤
8	Hearing voices that other people do not hear	①	②	③	④	⑤
9	Feeling that most people cannot be trusted	①	②	③	④	⑤
10	Suddenly scared for no reason	①	②	③	④	⑤
11	Temper outbursts that you could not control	①	②	③	④	⑤
12	Feeling afraid to go out of your house alone	①	②	③	④	⑤
13	Other people being aware of your private thoughts	①	②	③	④	⑤
14	Feeling others do not understand you or are unsympathetic	①	②	③	④	⑤
15	Feeling that people are unfriendly or dislike you	①	②	③	④	⑤
16	Having to do things very slowly to ensure correctness	①	②	③	④	⑤
17	Feeling inferior to others	①	②	③	④	⑤
18	Soreness of your muscles	①	②	③	④	⑤
19	Feeling that you are watched or talked about by others	①	②	③	④	⑤
20	Having to check and double-check what you do	①	②	③	④	⑤
21	Difficulty making decisions	①	②	③	④	⑤
22	Feeling afraid to travel on buses, subways, or trains	①	②	③	④	⑤
23	Hot or cold spells	①	②	③	④	⑤
24	Having to avoid certain things, places, or activities because they frighten you	①	②	③	④	⑤
25	Your mind going blank	①	②	③	④	⑤
26	Numbness or tingling in parts of your body	①	②	③	④	⑤
27	Feeling hopeless about the future	①	②	③	④	⑤
28	Trouble concentrating	①	②	③	④	⑤
29	Feeling weak in parts of your body	①	②	③	④	⑤
30	Feeling tense or keyed up	①	②	③	④	⑤
31	Heavy feelings in your arms or legs	①	②	③	④	⑤
32	Feeling uneasy when people are watching or talking about you	①	②	③	④	⑤
33	Having thoughts that are not your own	①	②	③	④	⑤
34	Having urges to beat, injure, or harm someone	①	②	③	④	⑤
35	Having urges to break or smash things	①	②	③	④	⑤
36	Feeling very self-conscious with others	①	②	③	④	⑤
37	Feeling uneasy in crowds, such as shopping or at a movie	①	②	③	④	⑤
38	Spells of terror or panic	①	②	③	④	⑤
39	Getting into frequent arguments	①	②	③	④	⑤
40	Others not giving you proper credit for your achievements	①	②	③	④	⑤
41	Feeling so restless you couldn't sit still	①	②	③	④	⑤
42	Feelings of worthlessness	①	②	③	④	⑤
43	Shouting or throwing things	①	②	③	④	⑤
44	Feeling that people will take advantage of you if you let them	①	②	③	④	⑤
45	The idea that you should be punished for your sins	①	②	③	④	⑤

Appendix B: Turkish version of the Symptom Assessment-45 Questionnaire (SA-45)

Zaman zaman karşılaşabildiğimiz problemlerin bir listesi aşağıda verilmiştir. Dikkatle okuduktan sonra, bugün dahil son 7 gün boyunca bu problemlerin sizde yarattığı rahatsızlık veya gerginliğin derecesini en iyi tanımlayan sayıyı işaretleyin. Her soru için sadece bir işaretleme yapın ve herhangi bir seçeneği atlamamaya özen gösterin. Teşekkürler...

		Hiç	Az	Orta	Çok	Aşırı
1	Kendimi yalnız hissediyorum	①	②	③	④	⑤
2	Hüzünlüyüm	①	②	③	④	⑤
3	Hiçbir şey ilgimi çekmiyor	①	②	③	④	⑤
4	Korkuyorum	①	②	③	④	⑤
5	Başkalarının düşüncelerimi kontrol edebileceğini düşünüyorum	①	②	③	④	⑤
6	Sorunlarımın bir çoğu için başkalarını suçluyorum	①	②	③	④	⑤
7	Açık alanlarda veya sokakta korkuyorum	①	②	③	④	⑤
8	Başkalarının duymadığı sesler duyuyorum	①	②	③	④	⑤
9	Çoğu insanın güvenilmez olduğunu düşünüyorum	①	②	③	④	⑤
10	Sebepsiz yere birdenbire korkuya kapılıyorum	①	②	③	④	⑤
11	Kontrol edemediğim öfke patlamaları yaşıyorum	①	②	③	④	⑤
12	Tek başıma evden çıkmaya korkuyorum	①	②	③	④	⑤
13	Diğer insanların kafamdaki düşüncelerin farkında olduğunu düşünüyorum	①	②	③	④	⑤
14	İnsanların beni anlamadığını ve hislerimi paylaşmadığını düşünüyorum	①	②	③	④	⑤
15	İnsanların bana dostça yaklaşmadığını ve benden hoşlanmadığını düşünüyorum	①	②	③	④	⑤
16	Düzgünlüğünden ve doğruluğundan emin olmak için işleri çok yavaş yapmak zorundayım	①	②	③	④	⑤
17	Kendimi diğerlerine göre daha aşağı hissediyorum	①	②	③	④	⑤
18	Adale ağrılarım var	①	②	③	④	⑤
19	Başkalarının beni gözetlediğini veya benim hakkımda konuştuğunu düşünüyorum	①	②	③	④	⑤
20	Yaptığımı tekrar tekrar kontrol ediyorum	①	②	③	④	⑤
21	Karar vermekte zorlanıyorum	①	②	③	④	⑤
22	Otobüs, metro veya trenle yolculuk yapmaktan korkuyorum	①	②	③	④	⑤
23	Sıcak basıyor veya soğuk soğuk terliyorum	①	②	③	④	⑤
24	Beni korkuttukları için, belli şeyler, yerler ya da faaliyetlerden kaçınıyorum	①	②	③	④	⑤
25	Zihnim birden boşalıyor	①	②	③	④	⑤
26	Vücudumun bazı kısımları uyuşuyor veya karıncalanıyor	①	②	③	④	⑤
27	Gelecek hakkında umutsuzum	①	②	③	④	⑤
28	Konsantre olmakta güçlük çekiyorum	①	②	③	④	⑤
29	Vücudumun bazı kısımlarında güçsüzlük hissediyorum	①	②	③	④	⑤
30	Kendimi gergin ya da tedirgin hissediyorum	①	②	③	④	⑤
31	Kollarımda veya bacaklarımda ağırlık hissediyorum	①	②	③	④	⑤
32	İnsanlar bana baktıklarında veya benim hakkımda konuştuklarında kendimi rahatsız hissediyorum	①	②	③	④	⑤
33	Kendime ait olmayan düşüncelerim var	①	②	③	④	⑤
34	Birine vurma, incitme veya zarar verme isteği geliyor	①	②	③	④	⑤
35	Birşeyleri kırma veya ezme isteği geliyor	①	②	③	④	⑤
36	İnsanlarla beraberken beni nasıl algılayacaklar diye tedirgin oluyorum	①	②	③	④	⑤
37	Alışveriş yerleri veya sinema gibi kalabalık yerlerde kendimi rahatsız hissediyorum	①	②	③	④	⑤
38	Korku veya panik nöbetleri yaşıyorum	①	②	③	④	⑤
39	İnsanlarla sık sık tartışıyorum	①	②	③	④	⑤
40	İnsanlar başarılarımı yeteri kadar takdir etmiyor	①	②	③	④	⑤
41	O kadar huzursuzum ki, bir türlü yerimde duramıyorum	①	②	③	④	⑤
42	Kendimi değersiz hissediyorum	①	②	③	④	⑤
43	Bağırıyorum veya bir şeyler fırlatıyorum	①	②	③	④	⑤
44	İzin verirsem insanların benden yaralanmak isteyeceklerini düşünüyorum	①	②	③	④	⑤
45	İşlediğim günahlar için cezalandırılmam gerektiğini düşünüyorum	①	②	③	④	⑤

Appendix C: Turkish version of the Beck Depression Inventory

YÖNERGE :Aşağıdaki gruplar halinde bazı cümleler yazılıdır. Her gruptaki cümleleri dikkatle okuyunuz. **Bugün dahil geçen hafta içinde** kendinizi nasıl hissettiğinizi en iyi anlatan cümleyi seçiniz.Seçtiğiniz cümlelerin yanındaki numarayı daire içine alınız.Seçiminizi yapmadan önce her gruptaki cümlelerin hepsini dikkatlice okuyunuz.

1) ⓐ Kendimi üzgün hissetmiyorum.
ⓑ Kendimi üzgün hissediyorum.
ⓒ Her daim üzgünüm ve kesinlikle bu ruh halinden kurtulamıyorum.
ⓓ O kadar üzgün ve mutsuzum ki, buna dayanamıyorum.

2) ⓐ Geleceğe dair cesaretim kırıldı diyemem.
ⓑ Geleceğe dair cesaretim kırılmış hissediyorum.
ⓒ Geleceğe dair hiç bir beklentim yok.
ⓓ Geleceğin tamamen umutsuz olduğunu ve hiçbir şeyin değişmeyeceğini düşünüyorum.

3) ⓐ Kendimi aciz hissetmiyorum.
ⓑ Ortalama bir insandan daha çok yenilgiye uğradığımı düşünüyorum.
ⓒ Geriye dönüp hayatıma şöyle bir baktığımda, tüm görebildiğim bir çok yenilgi.
ⓓ Başlı başına bir başarısızlık örneğiyim.

4) ⓐ Her şeyden eskisi kadar zevk alıyorum.
ⓑ Eskiden zevk aldığım şeylerden şimdi daha az zevk alıyorum.
ⓒ Artık hiçbir şeyden eskisi kadar zevk almıyorum.
ⓓ Herşeyden sıkılıyorum ve hiç bir şey beni mutlu etmiyor.

5) ⓐ Kendimi hiçbir şey için özellikle suçlu hissetmiyorum.
ⓑ Kimi zaman kendimi suçlu hissediyorum.
ⓒ Çoğu zaman kendimi suçlu hissediyorum.
ⓓ Kendimi her zaman suçlu hissediyorum.

6) ⓐ Hiçbir şekilde cezalandırıldığımı düşünmüyorum.
ⓑ Cezalandırılıyor olabileceğimi düşünüyorum.
ⓒ Cezalandırılacağımı düşünüyorum.
ⓓ Cezalandırıldığımı düşünüyorum.

7) ⓐ Kendi kendimi hayal kırıklığına uğrattığımı düşünmüyorum.
ⓑ Kendi kendimi hayal kırıklığına uğrattım.
ⓒ Kendimden iğreniyorum.
ⓓ Kendimden nefret ediyorum.

8) ⓐ Kimseden daha kötü olduğumu düşünmüyorum.
ⓑ Zayıflıklarım ve hatalarım için kendimi eleştiriyorum.
ⓒ Hatalarım için durmadan kendimi suçluyorum.
ⓓ Olan her kötü şey için kendimi suçluyorum.

9) ⓐ Kendimi öldürmeye yönelik hiç bir düşüncem yok.
ⓑ Kendimi öldürmeye yönelik düşüncelerim var ama bunları asla gerçekleştirmem.
ⓒ Kendimi öldürmek istiyorum.
ⓓ Eğer fırsatım olsaydı kendimi öldürürdüm.

10) ⓐ Her zamankinden daha fazla ağlamıyorum.
ⓑ Eskiye nazaran daha çok ağlıyorum.
ⓒ Şimdi durmadan ağlıyorum.
ⓓ Eskiden ağlayabilirdim ama şimdi istesemde ağlayamıyorum.

11)
ⓐ Her zaman olduğundan daha asabi değilim.
ⓑ Genelde olduğumdan biraz fazla asabiyim.
ⓒ Çoğu zaman daha asabi ve kızgınım.
ⓓ Şimdi her daim asabiyim.

12)
ⓐ Diğer insanlara karşı olan ilgimi kaybetmedim.
ⓑ Diğer insanlara karşı her zaman olduğumdan daha az ilgiliyim.
ⓒ Diğer insanlara karşı olan ilgimi büyük ölçüde kaybetmiş durumdayım.
ⓓ Diğer insanlara karşı olan ilgimi tamamıyla kaybetmiş durumdayım.

13)
ⓐ Her zaman verebildiğim gibi iyi kararlar verebiliyorum.
ⓑ Karar vermeyi eskisine nazaran daha çok erteliyorum.
ⓒ Karar vermekte eskiye nazaran daha çok zorlanıyorum.
ⓓ Artık hiç bir şekilde karar veremiyorum.

14)
ⓐ Her zaman olduğumdan daha kötü göründüğümü düşünmüyorum.
ⓑ Yaşlı ve itici göründüğümü düşünerek endişelenirim.
ⓒ Görünüşümde beni itici kılan kalıcı değişiklikler olduğunu düşünürüm.
ⓓ Çirkin göründüğümü düşünürüm.

15)
ⓐ Her zaman olduğu gibi çalışabiliyorum.
ⓑ Birşeyi yapmaya başlamak her zaman olduğundan daha fazla çaba gerektiriyor.
ⓒ Herhangi bir şeyi yapmak için bile kendimi fazlasıyla zorlamam gerekiyor.
ⓓ Hiçbir şekilde çalışamıyorum.

16)
ⓐ Her zamanki gibi uyuyabiliyorum.
ⓑ Eskiden uyuyabildiğim gibi uyuyamıyorum.
ⓒ Her zamankinden 1-2 saat önce uyanıyorum ve tekrar uyuyamıyorum.
ⓓ Her zamankinden çok daha önce uyanıyorum ve bir daha uyuyamıyorum.

17)
ⓐ Her zamankinden daha fazla yorulmuyorum.
ⓑ Eskiye nazaran daha çabuk yoruluyorum.
ⓒ Neredeyse yaptığım herşey beni yoruyor.
ⓓ Hiçbir şey yapamayacak kadar yorgunum.

18)
ⓐ İştahım her zamankinden kötü değil.
ⓑ İştahım eskisi kadar iyi değil.
ⓒ İştahım bu aralar çok kötü.
ⓓ Artık hiç iştahım yok.

19)
ⓐ Son zamanlarda neredeyse hiç kilo kaybetmedim.
ⓑ 5 kilodan fazla kaybettim.
ⓒ 10 kilodan fazla kaybettim.
ⓓ 15 kilodan fazla kaybettim.

20)
ⓐ Sağlığım açısından her zamankinden daha tedirgin değilim.
ⓑ Ağrı, sancı, mide bulantısı, kabızlık gibi fiziksel sıkıntılar çekmekten endişeleniyorum.
ⓒ Fiziksel problemler yaşamaktan çok endişeleniyorum ve bunun dışında başka birşeyler düşünmek çok zor oluyor.
ⓓ Fiziksel problemlerim hakkında o kadar çok endişeleniyorum ki, başka hiçbir şey düşünemez oldum.

21)
ⓐ Cinsel ilişkiye olan ilgimde herhangi bir değişiklik hissetmiyorum.
ⓑ Cinsel ilişkiye olan ilgim eskiye nazaran daha az.
ⓒ Bu aralar cinsel ilişkiye olan ilgim çok az.
ⓓ Cinsel ilişkiye olan ilgimi tamamen kaybettim.

Appendix D: Turkish version of the State-Trait Anxiety Inventory

STAI FORMU TK - I

Aşağıda kişilerin kendilerine ait duygularını anlatmada kullandıkları birtakım ifadeler verilmiştir. Her ifadeyi okuyun, sonra da **şu anda** nasıl hissettiğinizi, ifadelerin yan taraflarındaki şıklardan uygun olanı işaretlemek suretiyle belirtin. Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenin üzerinde fazla zaman sarfetmeksizin **şu anda** nasıl hissettiğinizi gösteren cevabı işaretleyin.

		Hayır	Biraz	Çok	Tamamiyle
1	Şu anda sakinim	①	②	③	④
2	Kendimi emniyette hissediyorum	①	②	③	④
3	Şu anda sinirlerim gergin	①	②	③	④
4	Pişmanlık duygusu içindeyim	①	②	③	④
5	Şu anda huzur içindeyim	①	②	③	④
6	Şu anda hiç keyfim yok	①	②	③	④
7	Başıma geleceklerden endişe ediyorum	①	②	③	④
8	Kendimi dinlenmiş hissediyorum	①	②	③	④
9	Şu anda kaygılıyım	①	②	③	④
10	Kendimi rahat hissediyorum	①	②	③	④
11	Kendime güvenim var	①	②	③	④
12	Şu anda asabım bozuk	①	②	③	④
13	Çok sinirliyim	①	②	③	④
14	Sinirlerimin çok gergin olduğunu hissediyorum	①	②	③	④
15	Kendimi rahatlamış hissediyorum	①	②	③	④
16	Şu anda halimden memnunum	①	②	③	④
17	Şu anda endişeliyim	①	②	③	④
18	Heyecandan kendimi şaşkına dönmüş hissediyorum	①	②	③	④
19	Şu anda sevinçliyim	①	②	③	④
20	Şu anda keyfim yerinde	①	②	③	④

STAI FORMU TK- II

Aşağıda kişilerin kendilerine ait duygularını anlatmada kullandıkları birtakım ifadeler verilmiştir. Her ifadeyi okuyun, sonra da **genel olarak** nasıl hissettiğinizi, ifadelerin yan taraflarındaki şıklardan uygun olanı işaretlemek suretiyle belirtin. Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenin üzerinde fazla zaman sarfetmeksizin **genel olarak** nasıl hissettiğinizi gösteren cevabı işaretleyin.

		Hayır	Biraz	Çok	Tamamiyle
21	Genellikle keyfim yerindedir	①	②	③	④
22	Genellikle çabuk yorulurum	①	②	③	④
23	Genellikle kolay ağlarım	①	②	③	④
24	Başkaları kadar mutlu olmak isterim	①	②	③	④
25	Çabuk karar vermediğim için fırsatları kaçırırım	①	②	③	④
26	Kendimi dinlenmiş hissederim	①	②	③	④
27	Genellikle sakin,kendime hakim ve soğukkanlıyım	①	②	③	④
28	Güçlüklerin yenemiyeceğim kadar biriktiğini hissederim	①	②	③	④
29	Önemsiz şeyler hakkında endişelenirim	①	②	③	④
30	Genellikle mutluyum	①	②	③	④
31	Herşeyi ciddiye alır ve etkilenirim	①	②	③	④
32	Genellikle kendime güvenim yoktur	①	②	③	④
33	Genellikle kendimi emniyette hissederim	①	②	③	④
34	Sıkıntılı ve güç durumlarla karşılaşmaktan kaçınırım	①	②	③	④
35	Genellikle kendimi üzüntülü hissederim	①	②	③	④
36	Genellikle hayatımdan memnunum	①	②	③	④
37	Olur olmaz düşünceler beni rahatsız eder	①	②	③	④
38	Hayal kırıklıklarını öylesine ciddiye alırım ki hiç unutmam	①	②	③	④
39	Aklı başında kararlı bir insanım	①	②	③	④
40	Son zamanlarda kafama takılan konular beni tedirgin eder	①	②	③	④